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VOICE AND NERVE CONTROL

VOICE AND NERVE CONTROL

BY

JUTTA BELL-RANSKE

WITH SEVENTEEN DIAGRAMS

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November, 1915

TO

MY CHILDREN

THIS BOOK IS

LOVINGLY DEDICATED

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Those of the illustrations that are not my own original drawings I have adapted from James Lickley, Lennox Browne's Kuss and Germack and Huxley's physiology, to which works I am greatly indebted. I also wish to acknowledge my indebtedness to Mr. Frank Varner and to Doctor Alfred Muller for their careful reading of my manuscript and their help in the revising of the second edition of my book. It is due to Doctor Alfred Muller's painstaking efforts that my book is republished.

The Author.

INTRODUCTION

Realising that my book on the voice, "Health, Speech and Song," published in 1902,* was inadequate to cope with the rapid progress in voice culture during the last few years, I decided that a more comprehensive and progressive work was essential, if my labours were to prove of any value.

I have, therefore, written an entirely new book, embracing what I considered of vital interest in the earlier work and developing it to meet what I believe to be the need of to-day. I sincerely hope that the result of my added years of untiring investigation will both carry conviction and prove of service.

Thirty years of practical experience as a lecturer and teacher of voice culture have led me to believe that there is but *one* reasonable

* Swan Sonnenschein & Co.; London.
E. P. Dutton. New York.
(First edition exhausted 1907 and not republished.)

way of training the vocal organ, and that its systematic development can be so practically presented in book form, that students, to a great extent, can do the fundamental work *without* the aid of a master.

In this book I have attempted to bring elocution and song into much closer relation; hoping to prove that since both involve the progressive development of the same organ, they are closely related in their methods.

In spite of the many advanced conceptions of vocal art, voice production still remains, to a very dangerous degree, a matter of guesswork, and this confusion springs largely from want of discrimination between the preparatory work needed for the adjustment of the organ and the art of playing upon it. It is because of this confusion that both the beauty and the endurance of the voice so often remain unrealised, both by the speaker and the singer.

But even apart from the artistic values, it is time we should recognise that voice-culture is intimately related to health, wherefore it concerns not only the artist, but every one.

PERFECT VOICE TRAINING REQUIRES PERFECT BREATHING, which, in the twofold, scientific understanding of inhalation and control, influences not only our nasal cavities, our throat, our lungs and our digestive organs, *but our nerves.* For conscious breath control, in its scientific development, will prove to be the medium that stimulates our entire being.

In Part III, ten consecutive lessons with explanatory diagrams have been added which will give a new and practical insight into this subject. The repetitions which these lessons of necessity must involve will, I hope, increase the students' knowedge to such an extent that breath control and the perfect use, at least of the speaking voice, can be conquered by all who conscientiously apply themselves to my instructions.

In these ten progressive lessons, art will be made to go so consistently hand in hand with nature that its underlying principles will always be apparent. For voice will ultimately prove to be only a means to a greater, psychological recognition resulting in a new un-

derstanding of self-control and self-realisation.

We are advancing towards a great revolution in voice culture which will show that a far deeper and more significant mode of breathing than the muscular must be brought to bear upon the production of voice, otherwise students may fail not only in their art, but in developing the only power which can withstand the nervous strain that is forced upon us all in our present restless, yet wonderfully progressive age.

JUTTA BELL-RANSKE.

New York, N. Y., October, 1915.

PART I

Analysis of the Vocal Organ

and

Our Conflicting Schools of Training

"All I claim for science is a right of veto against methods which are physically hurtful."

—Sir Morell Mackenzie.

UNIV. OF CALIFORNIA

VOICE AND NERVE CONTROL

CHAPTER I

PHYSICAL ADJUSTMENT AND VOICE

In the study of voice production, it is necessary to realise from the beginning that the vocal organ is an instrument consisting of three factors which we must learn to understand and govern in such a manner that the organ is properly adjusted before we practise upon it.

There is hardly an instrument to which the voice has not been compared; and though these comparisons are interesting, they are of minor importance, as the voice stands in a class by itself.

The only comparison which will prove valuable for our purpose is that of Ferrein, who likened the vocal organ to a violin, the vocal

cords being the strings, the current of air the bow, and the diaphragm muscle the hand that holds the bow. This comparison may be said to tally closely with the *sensation* of song, and will be of use in our investigation.

But I hope, as my subject develops, to prove that the vocal organ is so wonderful in construction, and has so many points of similarity to both reed and string instruments, that it may with advantage be likened to either.

Most physiologists agree that the vocal organ is a flexible reed instrument, the lungs being the bellows, the lips or cords the reeds, and the thorax, the throat, the pharynx, the mouth and the nasal cavities, the various parts of the resonator. It matters little at present, however, whether we regard the voice as a reed or a string instrument, so long as we get a clear conception of its factors, in order that their functions may be thoroughly understood and made to work in harmony.

In the study of these separate factors, and in getting them under control systematically, lies the preparatory work of voice-production.

The old Italian masters knew this, and put their pupils through a course of training, concentrating on one element after the other, so as to insure a systematic and complete development of the voice.

All the various and apparently contradictory schools of voice-culture, are but small parts of the great whole. Each master concentrates in particular on one of the factors, believing the whole truth of voice production consists in the knowledge *he* has obtained of that one factor. Because a particular treatment benefited *him,* he is convinced that the truth of voice production lies in the special training which corrected his individual fault, and that others must of necessity benefit by the same treatment. Unfortunately, however, what is good for one is not necessarily good for all.

Hence, it follows that when one singer declares the action of song to be regulated by the position of the larynx; another, that it is regulated by the soft palate or uvula, or other parts of the resonator; a third and fourth,

that it is regulated entirely by exhalation, or inhalation; they are merely revealing their personal difficulties in training.

Instead of being confused by this, we must realise the necessity of an intimate knowledge of the whole organ, so that we may learn to understand how the component parts should act. For, if we consider the subject from an unprejudiced view-point, we shall be forced to acknowledge that, according to nature, there can be but *one* correct method, and that a practical realisation of the present confusion will enable us to combine our fragmentary knowledge into a complete system.

The various methods can be classified under the following headings.

1. The School of three registers.
2. The Larynx School, or open throat method.
3. The Soft Palate School.
4. The School of Nasal Resonance.

All these schools have their excellent points, but not one is complete in itself. Successful

singers are *unconsciously* combining the underlying principles of them all.

Hence, it is not surprising that in some instances teachers succeed in producing splendid singers by methods which seem diametrically opposed, a fact which convinces each one of the infallibility of his or her method. But these comparatively rare successes are due entirely to the fact that these students were fortunate enough to find masters who corrected the particular fault that hindered their development.

Large numbers of students are forcing their voices by practising on an organ which is imperfectly adjusted. Many professional singers and speakers are suffering from breakdown for the same reason; for a faulty position will not only cause an unpleasant timbre, but result in a strain that must eventually injure the organ and end in chronic irritation.

I shall discuss the three factors separately and endeavour to make the function of each as plain as possible, hoping to prove with

equal clearness how they work in concord one with the other. To make the subject practical and comprehensive, I will treat the factors in the following order:

First: The motor factor, Breath.

Second: The Resonator.

Third: The Organ itself.

CHAPTER II

THE MOTOR FACTOR, BREATH

"Learn to breathe correctly and your life may be song."

BREATH is life.

Voice production must consequently from its very basis be considered a most serious and important study, since its motor factor springs from our life current. And we should be made to realise that the correct development of either must strengthen both.

The first important step in voice training, therefore, is learning to breathe correctly.

Unfortunately, correct breathing is rarely understood, even among our teachers; very few of them have a clear conception of the various operations that should take place before perfect control of the voice can be obtained.

The old Italian masters realised fully the importance of breathing, and gave years of

study to it. We constantly quote their well-known remark: *"Chi sa cantare sa respirare,"* but without fully realising what this means. With a great many of our teachers and singers alike, correct breathing is associated with the lungs, which is a great error, their action being entirely automatic. *In fact, conscious or voluntary lung expansion becomes only too often a hindrance to proper tone production.* No one has ever conquered the art of either song or elocution by concentrating on lungs.

This statement may be very doubtfully received by many; but I hope to convince even the most sceptical.

The first essential in regard to breathing is to realise that it can be approached from two points of view: that of health, and that of art. From the health point of view, the lungs become the fundamental operators, as the first principle of health is good circulation, and as plenty of oxygen is needed for this purpose lung expansion becomes a conscious movement.

But this expansion should *not be taught through the medium of voluntary breathing.*

It should be taught through the medium of anatomical adjustment.

Voluntary inhalation is of such importance in voice culture that it should never be associated with operations which ought to be either automatic or habitual.

The lungs are under the immediate control of the bones or framework. Wherefore, it is most essential to realise that, when an expansion of the framework takes place, the lungs follow this movement, and air rushes in to fill the vacuum without any effort on our part.

If this statement appears strange, test its truth by expanding the framework of the chest without taking a voluntary breath. That this test may carry still greater conviction, read aloud while the expansion take place, and the realisation will dawn that nothing can stop the influx of breath into the lungs, as it must increase or decrease according to our adjustment. And this will show how wonderfully nature governs the supply of our forces if we obey her laws.

Perfect anatomical adjustment, which also secures beauty of form, is *the first law* of health, and consequently of art, as we must have a sound basis for its development.

To simplify the difficult subject of breathing, it should be divided into the following classifications:

1. Anatomical, which governs the lungs.

2. Diaphragmatic, which governs the muscles.

3. Medulla Breathing, which, through the nervous system, governs the entire body.

It is this last mode of breathing that concerns the *Artist,* since diaphragmatic adjustment, as well as lung expansion, must become absolutely unconscious factors operating automatically. Nerve breathing governs what we term complementary air supply, which, through a conscious mode of deep inhalation, stimulates our entire being and adjusts all the elements of our vocal organ.

These three modes of breathing should develop so systematically that they become an

essential progression in perfect adjustment. Students must be taught their development in such a natural, yet scientific, manner that the result is absolute control not only of their vocal organ but of their mental poise.

Therefore, after an easy anatomical adjustment has been obtained, it is desirable to forget that we have lungs and turn our attention to the diaphragm, which, if we understand its actions, will take entire charge of the lungs, since its proper function is to govern all the muscles which expand the framework.

Diaphragm breathing, however, like lung breathing, is rarely understood. And though the diaphragm is the most important muscle in the human body its action will be of little help to the student unless it is made to bear scientifically upon the instrument.

It is always *the object* that we must have in view, as we should never exercise a muscle without realising our aim. Many teachers force their pupils to concentrate on the diaphragm without explaining either its exact adjustment

or what causes its increased expansion, wherefore the unfortunate student frequently fails to obtain satisfactory results.

The diaphragm is a subordinate factor.

And it is of the utmost importance that all who are working with the voice should understand what this means, as the whole secret of voice production may be said to be based on the recognition of this fact.

To obtain a practical insight into the action of the diaphragm, it should be approached, *first,* as THE GUARDIAN OF OUR ANATOMICAL EXPANSION—in other words, the lungs; *second,* as THE BASE FROM WHICH OUR INSTRUMENT OPERATES. In the first case, the diaphragm becomes the controlling force; in the second, simply the medium of a power greater than itself; because, as muscles govern bones, so will nerves be found to govern muscles until at last all come under the control of one superior head centre.

Students are always told that breath control is the great secret of voice production; but this is apt from the very beginning to lead them

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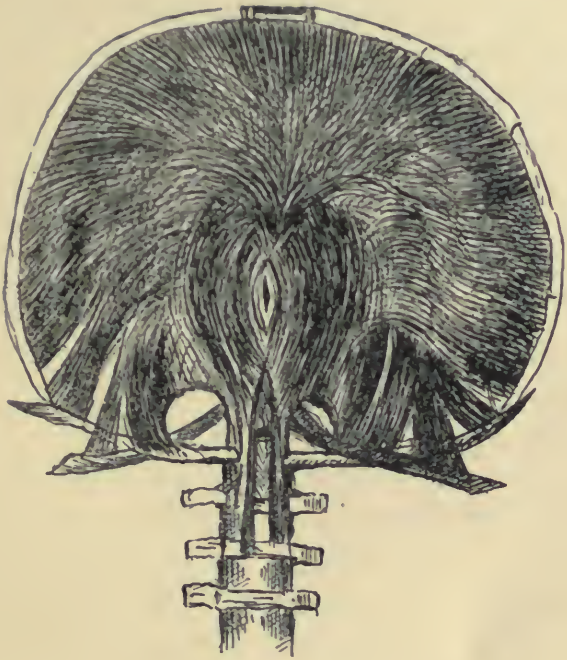

THE DIAPHRAGM

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astray, since most of them associate control of voice either with muscular action of the diaphragm, or with exhalation.

To exhale or to give out is, we admit, the great object to be attained in the end. But before we can give out we must possess: before we can exhale, we must know how to inhale; just as we must know how to adjust our instrument before we can achieve satisfactory results in playing upon it.

However much teachers may argue against the need of physiological knowledge, the student will not only retard his progress, but may ruin his instrument by being permitted to practise upon it without scientific insight into its proper adjustment.

A *complete* understanding of the mechanism of voice will solve all the difficulties of training, whereas a *little* knowledge will always prove a very dangerous thing.

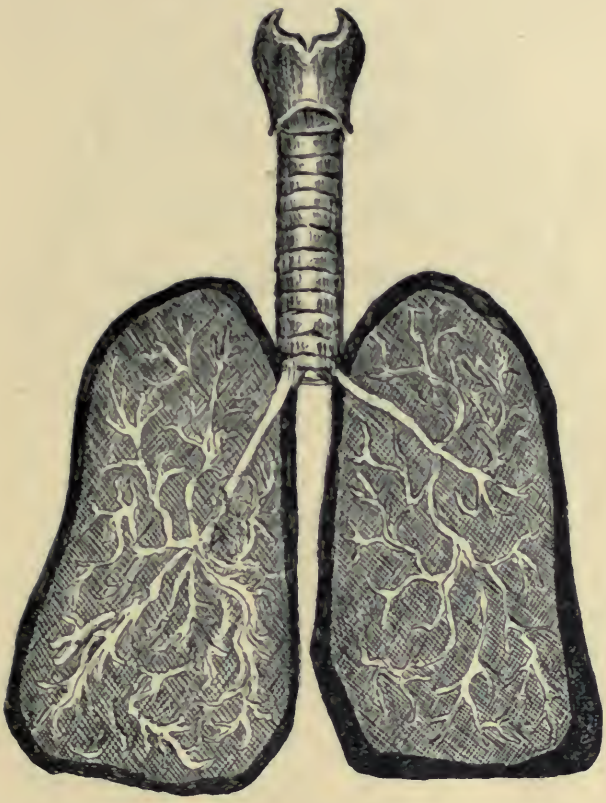
CHAPTER III

THE LUNGS AND THE DIAPHRAGM

THE lungs, in which the air is stored, lie in the chest cavity, and a knowledge of their shape is of great importance to us, as it will enable us to recognise the need for diaphragmatic expansion. They are broad at the base and narrow at the top, and consist of two separate masses of spongy substance divided into lobes, which subdivide into lobules and minute aircells.

The lungs are enclosed in double bags (the pleuræ), and are attached to the windpipe by two tubes called the bronchi; which are again divided into the bronchial tubes, through which the air is carried to the lungs.

The windpipe is a flexible tube consisting of C-shaped rings covered by mucous membrane; and has the power of expansion and contraction. This action is of great importance to



THE LUNGS
The Larynx or Voice-box
The Trachea or Windpipe
The Bronchi
The Bronchial Tubes

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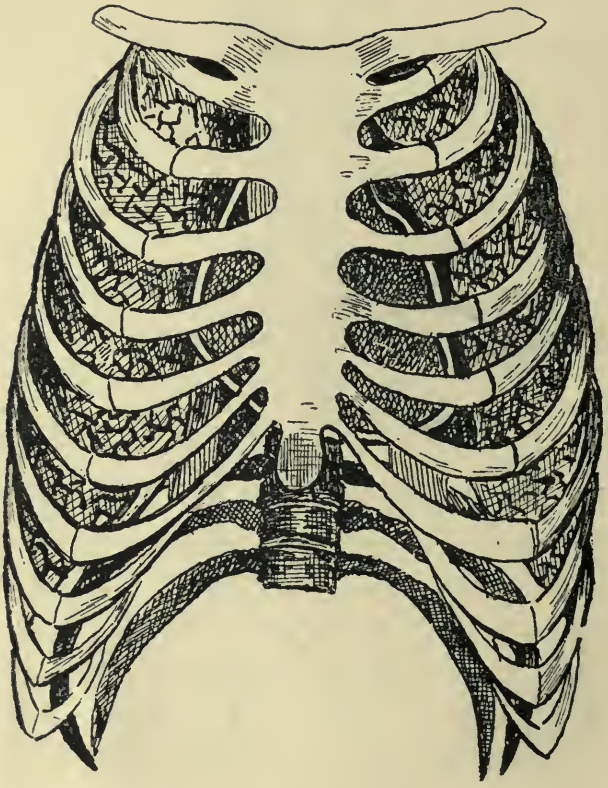

The Chest Frame, Showing the Position of the Lungs and Heart

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song, as the vocal organ is situated upon the upper ring of the windpipe, and, consequently, is under its immediate control.

The lungs fit perfectly into the framework of the chest, filling the entire cavity except the small part occupied by the blood vessels and the heart.

This framework is very flexible and has great powers of expansion, which shows how nature provides for the regulation of our lungs. It consists of the spine at the back, the breast-bone and collar-bones in front, and twelve ribs, of which ten are attached as by a hinge to the spine and breast-bone, while the two lowest ribs on each side, termed the floating ribs, extend from the spine to the outer rim of the diaphragm or midriff, which divides the chest from the abdomen.

This attachment of the diaphragm to the floating ribs indicates the close relationship of this muscle to our framework, which is further covered by numerous fibres that spring from the diaphragm, spreading in every direction over the ribs, while two strong bands,

called the pillars of the midriff, run through the centre of the diaphragm and are attached to the spine.

When the framework is properly adjusted and the diaphragm extended, these bands grip the spine, influencing the position of the thorax on one side and the pelvis on the other, and thus may be termed the central regulators of the balance of physical adjustment. To preserve this balance the diaphragm must remain in its extended position, which increases the tension of the pillars of the midriff and of the fibres, at the same time that it stimulates the action of the abdominal and lumbar muscles, thereby slightly distending the abdomen.

There is a dangerous tendency, not only among teachers of voice production, but even among teachers of physical culture, to draw the diaphragm back. This contraction encourages what we term clavicular breathing, in that it forces the air too high in the lungs; and also prevents the muscular adjustment needed, before the nerve system can operate in complementary activity.

It is essential for the student to understand the function of the various nerve centres, as they play a very prominent part in voice culture, and will, when the student understands nerve breathing, represent the means by which alone song and elocution can be fully developed.

But before nerve breathing can be applied, anatomical and diaphragmatic adjustment must be conquered in their balanced, complementary development, as they represent the perfect poise needed before nerve control can be enforced.

In order to make the action of the diaphragm still clearer, I will state what takes place in its proper adjustment.

The diaphragm flattens, that is, it is drawn down and forward, but it must be remembered that this action cannot take place without previous anatomical adjustment. As soon as the diaphragm expands, the floating ribs, which are attached to its rim, are pressed forward and outward, thereby greatly expanding the lower part of the lungs: an act which constitutes what

is termed rib or costal breathing, and is simply a consequence of correct adjustment. To give a practical illustration place the hand over the diaphragm and push the muscle outward without taking a breath and diaphragmatic adjustment will be seen to be as independent of voluntary breathing as is the adjustment of our lungs. Should the muscular expansion of the diaphragm prove forced it is because the muscle has been imperfectly adjusted.

As we advance in our understanding of the diaphragm, we shall see that it moves more or less forward, according to our mode of inhalation, and slightly back and upward in the act of exhalation. At no time, should the breath exhalation be drawn upon to such a degree that the anatomical adjustment collapses, as this will force the diaphragm back till the costal expansion is lost.

Anatomical and diaphragmatic adjustment should be *habitual.* They are the requisite for proper breathing, and should be looked upon as means to that end: not as an end in themselves. Singers and speakers are dependent

on a greater supply of breath than either of these adjustments can secure. Students should, therefore, be given practical knowledge of the various degrees of control and learn to distinguish between the complementary increase of breathing needed in voice culture as compared to the more relaxed mode essential in life or health breathing.

There should be four kinds of air in our lungs:

THE RESIDUAL AIR, which cannot be expelled.

THE SUPPLEMENTARY AIR, which remains after ordinary exhalation.

THE TIDAL AIR, which is used in gentle breathing.

THE COMPLEMENTARY AIR, which is inhaled in the deepest mode of breathing and is necessary to all notable physical achievement.

Supplementary air is *automatic.* Tidal air is the result of anatomical and diaphragmatic adjustment, its control, therefore, *habitual,* while complementary air is the outcome of a correct balance between our muscular and nerve centres.

As almost all vocal teachers advocate diaphragmatic breathing, it will prove of inestimable value to the student to know that there are two modes being taught, not only among teachers of voice, but among teachers of physical culture. Both these modes involve decided actions of the diaphragm, one through contraction, the other through expansion.

If the diaphragm is drawn in and up, that is, if forced contraction takes place, the lungs will be overcrowded with air, the cells consequently being too tense, which is not only fatiguing but injurious to health. Further, the increase of air in the lungs by over expansion results in loss of nerve force.

The *voluntary* action of our nerve system is of far greater importance in voice training than that of our lungs, and is, as a rule, totally ignored by our teachers; yet it is the all important medium through which, in the end, we alone can gain control of our entire mechanism. The great nerve centre, the solar plexus, lies in the closest contact with the diaphragm and is the most vital fibre in our organism. Its

name indicates its life giving power, our entire being is dependent upon its activity.

When we understand that the forced contraction of the diaphragm, with its strain on the abdominal muscles, makes the healthful and natural reinforcement of the nerve system impossible, we shall see that correct diaphragmatic adjustment is all important, as it is the gate leading to the very source of life. The diaphragm is called the *Keeper of Life,* not because it guards lung expansion, but because it guards the very Centre of life itself.

We are, therefore, beginning to understand why the philosophers of the East develop breath control through the nerve system. They know that to obtain endurance, a stimulus is needed which cannot be found in muscular action. Consequently, when we consider the fact that nine-tenths of humanity live without scientific knowledge of how to reinforce the nerve system, we begin to understand the reason for the nervous breakdowns so frequent everywhere in one form or another.

CHAPTER IV

MEDULLA OR NERVE BREATHING

All who work with the voice acknowledge that breath control is the foundation of voice training. Yet there are comparatively few who, if we approach them on the subject, can explain breath control in a satisfactory, scientific manner. Even leading teachers and singers either evade the question by a hazy reference to diaphragmatic control, or by omitting all reference to the physiological side of the question, arguing in favor of the new theory that psychology alone can illumine the mystery of voice.

All who advocate voice culture on psychological principles, are unconsciously laying bare their own ignorance. Such teachers are simply hiding behind empty terms, as psychology has nothing whatsoever to do with either the necessary adjustment of our body, or that

of the vocal organ, both being dependent on a complete understanding of physiology.

The great mistake of many vocal teachers consists in ending their physiological investigation with the action of muscles and bones, instead of continuing until they recognise the fact that muscular movements must be controlled by a superior agency.

Nature has furnished us with an all important medium which connects our entire organism: the great mediator, which operates with equal sympathy between all physiological and psychological factors—our nerve system!

Consequently, the first thing is to acquaint ourselves, to a certain extent, with our nerve centres, that we may understand their functions, and arrive at a central point to which we can connect our will; and thus, through concentration, learn to discipline our forces, for we are beginning to understand that muscles cannot be trained except through nerves.

To gain some practical insight into the control of the nerve system it is essential for stu-

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THE NERVE SYSTEM

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dents to know something about the spinal cord with its afferent and efferent nerve fibres, receiving and transmitting nerve stimuli.

The spinal cord governs all motion. Its numerous pairs of afferent and efferent, or motor and sensory, nerves extend their fibres through the openings between the vertebræ, thus forming a chain of nerve centres working in mutural co-operation. At the top, where it enters the skull, it terminates in the all important nerve centre, *the Medulla Oblongata,* which controls the entire spinal cord. This centre is the regulator of our pulse and breath, being at the same time, the medium of communication between the nerves of the cervical plexus above and of the plexuses below.

The activity of the spinal cord is dependent on afferent nerve stimulation, which is received directly from the environment, for the afferent nerves are acted upon by outside conditions.

Through our mode of breathing we can therefore recharge the afferent segment of the entire nerve system, regulating its stimulation

by many varied degrees of inhalation, applied in accordance with our will and power of concentration.

Nerve breathing governs the supply of complementary air, and is controlled from the various plexuses up to the terminating centre of the spinal cord. This breathing stimulates all our organs, and may lead, through concentrated efforts, to an almost super-human power of development, yielding withal perfect repose.

This mode of respiration, which I term *Medulla breathing,* will be brought forward throughout this book in various connections, for it is the medium of all advanced physical, mental, and spiritual achievement.

That the student may learn to discriminate between the diaphragmatic action which springs from simple muscular movement, and that which results from Medulla respiration, let the forward muscular expansion of the diaphragm follow anatomical adjustment without any conscious breath or unnecessary force.

By placing the hand over the diaphragm

and drawing a deep conscious inhalation up to the Medulla, without giving the body a thought, the student will find that a great expansion takes place in the diaphragm, stimulating all parts of the entire trunk of the body. This expansion will increase greatly as our power of drawing breath *upward* develops, for the stimulation of the diaphragm will far exceed any we could possibly secure by concentrating our attention on muscular action.

As we learn to control this mode of breathing we will understand why Oriental philosophers concentrate on the nerve system, calling the diaphragmatic nerve plexus "The Sun," and the brain "The Moon," for they have long since recognised what, as yet, remains an enigma to most of us; namely, that access to the innermost recesses of our brain can be obtained only through nerve breathing, stimulated to greater activity through conscious inhalation directed from the solar plexus to the Medulla.

In ordinary, relaxed breathing, nature regulates the action of inhalation automatically by

sending stimuli down from the Medulla to the various plexuses, yielding a soothing reinforcement which *never* exhausts us. But for the cultivation of art, we must understand how to add a complementary increase of nerve stimuli by reversing this automatic action, drawing breath from the various plexuses up to the Medulla, and distributing its life giving current according to the concentration of our *will.*

In other words, health or life breathing becomes habitual, when nature's law of physical adjustment is understood and applied; whereas *Art* demands a voluntary increase of breath supply, directed through our will from any of the lower nerve centres, traversing the entire nervous system till it reaches its all important culminating centre, the Medulla Oblongata.

This mode of breathing can be developed in a comparatively short time if practice is systematic; but it must be done in progressive stages. The first rush of breath stimulation to the Medulla will make the student dizzy, as the charging of the afferent with the finer ether

vibrations, involved in nerve breathing, affects the brain and nerve system like wine. It stirs our dormant powers, not only kindling the muscular system to greater activity, but inspiring the mind, thus creating new psychological activity.

It is because of these effects that so many teachers have confused the physiological and the psychological agencies, making the erroneous statement that psychology will prove to be the elucidation of voice culture. It is therefore essential that students should understand why and how the nervous system presides over all our functions and harmonises them, and that its progressive development is entirely dependent upon physiological knowledge.

CHAPTER V

THE RESPIRATORY NERVES

BEFORE we can obtain control of nerve respiration and apply its principles to breathing, our attitude toward ourselves must undergo a change. And this attitude will not confuse us, but on the contrary relieve us of unnecessary strain, as we will stop wasting our energies on what nature would have done for us, if we had obeyed her law.

We have been brought up with such onesided conceptions of ourselves, that very few of us know that the nerve system is the direct agent of all change, and that it can be trained through *our will* till it governs all the other forces, instead of being governed by them. What we are to-day is the result of the condition we have developed in our nerve system, that condition having become second nature through force of habit.

We are beginning to understand that the

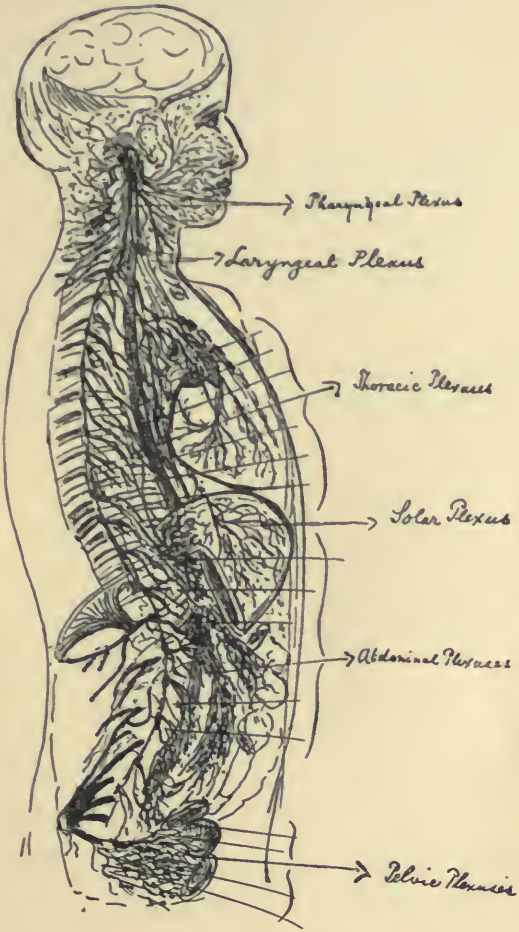
spine influences respiration and that the spinal marrow combines the various muscles operating in respiration. Without the spine the chestbox and abdomen could not rise and fall in breathing, nor the vocal organ operate.

The student must, therefore, learn to realise that we have *respiratory nerves* and that their actions must be classified in the same progressive stages that we have applied to the muscular system. For the nerves represent the underlying principle of all movement not only in our physical but in our mental activity.

Consequently, we must cease associating respiration with lungs only, since lung breathing, which involves a chemical change in our circulation, represents a very small portion of the breath needed throughout the body; a fact which is hardly recognised even among our teachers of health, though the importance of its recognition was brought before the Royal Society of London as early as May 1822; and it is of such absorbing interest to see what was said on this important subject at that time that I will quote from the Paper read.

"If the act of dilating and compressing the chest were sufficient to the act of respiration, how is the air to find admission through the long, membranous and compressible tubes which communicate between the lungs and the atmospheres? There would be no communication; breathing would act as it does in an apoplectic man; the lips would move like valves flapping in the stream of air; the nostrils would be collapsed when they should be expanded: the soft palate would fall down upon the passage; the muscles of the glottis would be relaxed, and instead of the variety of sounds and articulate language which results from the accommodation of these muscles to the nerves of respiration, there would issue no sound, but the snoring of stertorous breathing as in an apoplectic person."

It is, therefore, self evident that voice training in the end must be brought under the government of nerve respiration; which through practical application will revolutionise our method of training as it will compel the recognition that perfect voice production *only begins*



THE GOVERNING PLEXUSES OF THE BODY

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where most of our teachers to-day believe voice training ends; that is, when we have obtained perfect muscular and mental poise, for till then the instrument is not ready to be extensively used nor the singer or speaker ready to interpret the psychological message which is the soul of the voice.

Lungs, diaphragm, vocal cords, resonator will then prove to be subordinate elements which nerve breathing alone can properly govern.

To help students to get a clear insight into the connections of the nerve system, they must be given decided landmarks from which to operate so that the voluntary action of respiration may be made to bear practically on the factors that need reinforcement. And for this purpose the student must learn to understand the various important centres we term a plexus, which means an intricate mass of motor nerves which interchange branches before entering the muscles.

To simplify the conception of these various plexuses the accompanying drawing will help

the student to realise that muscles act in concord not through powers of their own, but through the nerves. It is through the connection formed in a plexus that muscles are combined into one class and can be made to act by one impulse. All variety of combination are formed in the plexuses, one governing contraction, the other relaxation.

Among the respiratory nerves branching off from the Medulla and the upper part of the spinal marrow are:

1. The pneumo-gastric nerve which through various branches associates the pharynx, the larynx, the lungs, the heart and stomach, all of which also are connected to other nerves.

2. The respiratory nerve of the face; the portio dura which, in addition to being the nerve of expression, governs the motions of the nostrils, lips and face operating in correspondence with the movements of respiration of the chest.

3. The Glosso-pharyngeal nerve which connects the tongue and muscles of the pharynx,

animating the muscles of the fauces in breathing, speaking and singing.

4. The spinal accessory, or superior respiratory nerve of the trunk, which passes up into the skull from whence it descends upon the neck and shoulders regulating them, thereby relieving the chest and stimulating the muscles in the thorax to greater power over the ribs.

5. The great internal respiratory nerve: the phrenic or diaphragmatic, termed the solar plexus, which is the only nerve that has hitherto been considered of importance to voluntary breath control, its action already having been mentioned to the student.

6. The external respiratory nerve which connects with the diaphragmatic nerve. This nerve runs down the neck, crosses the cervical and arrives at the outside of the ribs supplying mucles which are already supplied from regular nerves that are connected to the shoulders, chest, neck and face; nerves which are necessary for speech and expression.

7. The lumbar nerves and the pelvic and

sacral plexuses which govern the abdomen.

Since the respiratory nerves are the only direct mediums of voluntary action, respiration should begin to represent a new and far deeper significance to the student of voice than lung breathing, since it administers not only to the body, but to the mind.

The coming revolution in the training of the voice will consequently go hand in hand with a still greater revolution in the training of self-realisation, for ere long man will be forced to recognise the fact that through conscious application of his nerve system alone will he be able to develop his talents and his personality.

CHAPTER VI

THE RESONATOR

In the analysis of the vocal instrument, the resonator will, as stated, be discussed first, although from the point of view of tone, this factor is considered as a secondary element; in other words, it gives effect to tone, but is not the cause of tone.

The resonator extends upward from the vestibules of the larynx and consists of the throat, the pharynx, the nasal cavities and the mouth; the latter also being the articulating cavity which, through the agency of the tongue and lips, forms sound into speech. The nasal cavities are divided from the mouth by the hard and soft palate, terminating in the uvula, from which extend the pillars of the fauces connected to the larynx and tongue.

My reasons for discussing the resonator before the vocal organ itself are threefold.

First: Because it is the medium which supplies the air to our lungs; a function, which I shall dwell upon at some length as it is of vital importance.

The nose is the natural organ of inhalation; through its wonderful construction it moistens, purifies and regulates the air; facts rarely recognised. Their recognition would simplify voice culture greatly, for the throat and pharynx—in fact the whole resonator, would be in a far healthier condition, and consequently much more easily brought under control, if strengthened by the soothing effect of air, purified, moistened and warmed to the right temperature by passing through the nose.

It is strange that such a simple yet important fact should not be more universally understood and utilised. Closing of the nasal passage is due entirely to ignorance of its importance in breathing, as are almost all cases of swollen glands, enlarged tonsils, relaxed uvula and sore throat. And this is readily seen when we consider that the air drawn in

THE RESONATOR

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through the mouth, travels through all the delicate parts of the throat and into the lungs in all temperatures but the right one, and is often full of impurities: incorrect inhalation, therefore, resulting in a great deal of unnecessary trouble both in life and in voice culture.

The resonator is often closed in both song and speech by the root of the tongue, the so-called "unruly member": and, on the other hand, often muffled in its resonance by the soft palate, which falls over the pharynx, preventing the resounding of the voice in the upper part of the resonator, thereby giving it an impure throaty quality.

The difficulty of controlling these muscles is the *second reason* for treating the resonator before discussing the vocal organ itself, as it is useless to attempt to govern the voice until the factor which creates sonority is regulated. We must, therefore, look upon the resonator as a separate element before we can understand its action.

The resonator does not create tone, but intensifies it, giving it colour and sonority. It

changes its shape somewhat for each tone, so as to vibrate in sympathy with all.

The sounds which issue from the vocal cords may be beautified and strengthened, but also spoiled by the resonator. And as many voices are ruined by faulty operations in the resonator, I do not think it possible to exaggerate the importance of its proper adjustment.

The resonator is looked upon by many as a self-regulating factor to which we need pay comparatively little attention; many teachers arguing that clear enunciation will overcome the difficulties of its various adjustments. And although there is some truth in this, such advice would prove of little help to those who have difficulty in enunciating distinctly in singing, unless they were made to understand why the difficulties of enunciation increase with song.

This is the *third reason* for treating the resonator before the organ itself. In speech people do not, as a rule, take notice of the quality of tone. As long as they enunciate with sufficient distinctness to be understood,

they are satisfied. The charm of a musical speaking voice is, however, so great that people should give some attention to phonation in speech. They would then simplify song, for there is no difference in the principles of adjustment, except in the degree of tension. By correct speech is meant speech in which phonation is governed; that is, where there is reinforced quality of sound.

As speech stands to-day, it is often antagonistic to song, since few breathe in such a manner as to influence the position of the larynx. All who teach voice should know that the larynx is tipped and lowered for song in order that, by greater friction against the outgoing air, the tone may be increased in volume. When this lowering takes place in those who are accustomed to speak with a very high lying larynx, the tongue and soft palate receive a pull through the various muscles by which they are connected with the larynx, and not being accustomed to this tension, they resist it, which results in strain of the muscles and throatiness of tone, as the root of the tongue

is liable to block the passage and thereby press the epiglottis too far over the aperture of the larynx.

It is from this greater muscular tension that the difficulties of distinct enunciation in song arise, these difficulties multiplying as the tension increases. Hence, we find it most difficult to enunciate on high notes.

To get the root of the tongue under control has proved a very tedious and difficult task with many, and those who have suffered particularly from it are inclined to believe that all the difficulties of voice lie there. Consequently teachers will force the student's attention on this unruly member whether it is needed or not.

The flexibility of the resonator is remarkable and without doubt the progress in voice training, which has taken place to such an astounding degree within the last ten years, is largely due to recognition of the effects obtained in the resonator.

These effects have taken such hold upon the profession, that all of the fundamental prin-

ciples of the old masters are laid aside, the present belief being that all the controlling powers of voice are found in the resonator. And though this in a manner may be conceded to be true, it is essential for us to recognise that, whatever happens in the resonator must never be looked upon as an *independent* cause, as its operations are complementary. In other words, *the resonator is a medium or responding body set vibrating through the means of a primary body.* It is absolutely essential that the resonator should be in a healthy condition and properly adjusted before it is extensively used since inflammation is easily set up in this most sensitive part of our organism.

Sore throat and relaxed vocal cords are very common among both singers and speakers, and spring either from incorrect inhalation or muscular strain on the resonator. Song and correct speech should invigorate and strengthen our throats as it strengthens our lungs, for the natural use of our organ is always invigorating.

CHAPTER VII

THE VOCAL ORGAN

"There is much music, excellent voice, in this little organ, yet you cannot make it speak."

It was a comparatively easy task to analyse the two factors which help to produce and intensify tone, for their positions are at least agreed upon, and however much at variance teachers and singers may be as regards the absolute action of each, the fact remains that the lungs lie in the chest and contain the motor element, regulated by the diaphragm and nerves; and that resonance is created in the passage which extends from the vocal cords, or vocal lips, to the speaking lips.

But as regards the vocal organ itself, the theories of scientists are numerous and contradictory.

Furthermore, the position and action of the vocal organ in song is such a vexed question

among singers and teachers, that to get it under control seems almost a hopeless task for those to whom nature has denied what is termed a "natural position of voice."

In explaining the vocal organ I shall avoid mentioning muscles that would confuse the student, for I wish this book to be a practical aid to song and speech, wherefore I shall omit unnecessary technical terms.

The vocal cords lie in a small triangular tube or box called the larynx, which is situated upon the upper ring of the windpipe, and consists of two shields (the thyroids) which meet in front in an acute angle, often protruding in the throat and known under the name of "Adam's Apple." The larynx is triangular at the top, and cylindrical at the base. The shields terminate at the back in two horns extending upward and downward, and are attached to the upper ring of the windpipe by the lower horns and through the upper horns connected by muscular bands to the tongue-bone and to the fauces extending from the soft palate; wherefore the influence of the action of the tongue

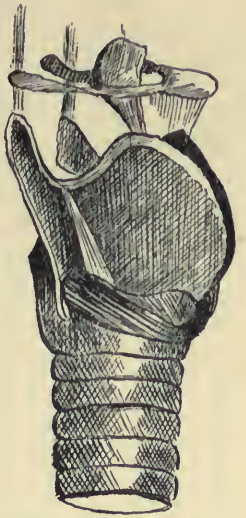
and soft palate on the voice may be easily understood.

The larynx is, as a rule, described as consisting of five cartilages; but to make the vocal organ clear to students of song (not to physiologists) I will treat the larynx separately, as I did the framework of the chest, and look upon it as an empty tube or box, consisting of its walls or shields alone.

In being viewed as an empty tube or box, the interior of the larynx represents what we term in physiology: *the glottis.* By inserting the vocal cords or valves into this tube the glottis is divided into three parts, the respiratory glottis, below the cords, the vocal glottis, above the cords, and the vibratory glottis between the cords.

These terms are somewhat confusing, as it is difficult for students of song to realise the functions of a space.

The vocal cords lie stretched across the larynx and are fastened in front to the shields where they meet in an angle, and at the back



SIDE VIEW OF THE LARYNX

FRONT VIEW OF THE LARYNX

SIDE VIEW OF THE LARYNX WITH ONE SHIELD CUT AWAY

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to two small pyramidal muscles (the arytenoidei) which are fixed on the upper ring of the windpipe.

These muscles are of great importance, as they regulate the tension of the vocal cords, and further, by moving outwards and inwards, close and open the vibratory glottis—that is, the space between the inner surfaces of the vocal cords. Since their outer surfaces are attached to the walls of the larynx by a tissue, air can escape through the vibratory glottis only.

The ring to which both the lower horns of the larynx and these controlling muscles are fastened, differs in shape from the other rings of the windpipe. It is narrow in front, and broad at the back, resembling the shape of a signet ring, which leaves a space, strung with muscular fibres, between the larynx and the front part of the ring. The most important of these are the ring shield (cricoid thyroid) muscles running from the ring to the shields of the larynx, since by their contraction these

muscles draw the larynx forward and downward to the ring, thereby involving the tension of the vocal cords.

The vital thing for the student is to understand that these muscles influence the vocal organ and consequently the resonator, as the upper horns of the larynx are attached to the important muscles of tension that connect with the soft palate.

In opposition to the ring shield muscles, there is another pair running parallel with the vocal cords and fastened like them to the angle of the shields in front and to the controllers or arytenoidei at the back. The contraction of these muscles pulls the larynx back into its former position, thereby relaxing the vocal cords. These muscles are called the shield controller muscles, or the thyro-arytenoidei.

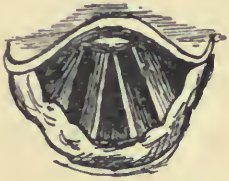
All that is necessary for teachers and students of song to realise is, that the arytenoidei control the opening or closing of the vibratory glottis by regulating the cords, and, furthermore, involve the action of the muscles of the larynx which influence the resonator.

Vocal Cords when Voice is Produced

Vocal Cords in Repose when no Voice is Produced

Deep Inspiration

Laryngoscopic View of Larynx when Voice is Produced



Laryngoscopic View when no Voice is Produced

As regards the part of the larynx *above* the vocal cords, consisting of the ventricles and vestibules, it is becoming of absorbing interest, since the space, which is termed the "vocal glottis," is beginning to play an important part in tone production. The ventricular bands, or so-called false vocal cords above, running parallel with the true vocal cords and acting in contrary motion with them, have at last ceased to be a matter of speculation in voice production as Galen's ancient conception of the functions of the larynx as a double valve has been verified and will prove of inestimable service to students.

It is because the preparatory muscular adjustment of the larynx is not understood that students sing through sensation; and as these sensations are apt to vary, they are bound to become confused and this confusion will continue until a simple understanding of physiology goes hand in hand with voice training. Physiology will then become, what it is meant to be, a practical means to an end for it will

furnish the missing links needed to unite the conflicting statements and theories of voice training into one complete and practical system.

CHAPTER VIII

HOW THE ELEMENTS WORK IN CONCORD

"Govern these vantages . . . Look you, these are the stops."

In considering the connection of the three factors which together form one perfect instrument, I wish to attract attention to the manner in which they are linked together.

In order to progress on practical principles we must understand the muscles that govern adjustment, and the various actions that involve their tension.

I explained in the last chapter that the larynx is situated at the top of the windpipe, and that the vocal cords are fastened to the front part of the larynx at one end and, through the medium of the controllers, to the windpipe at the other.

If we then recall that the upper horns of the larynx are connected to the soft palate

through the muscles of the fauces, we realise at once how the vocal cords become the central operator between the motor element and the resonator, and we can understand the direct influence the actions of both must have on the vocal organ.

Since the larynx is situated on the windpipe, it stands to reason that its movements determine the position of the vocal organ, and that consequently it is raised or lowered by the expansion or contraction of the windpipe, just as the soft palate, on the other hand, will force the larynx more or less over against the top ring, according to its tension or relaxation.

These actions should begin to give us a practical insight into the adjustment of the organ, for if the soft palate springs up, tipping the larynx over against the ring, and the windpipe, on the other hand, contracts downward, it must influence the tension of the vocal cords.

To give a more practical understanding of the resistance this tipping of the larynx involves, I will describe the so termed "vocal cords" in another way, as many students can-

THE CONNECTION OF THE ELEMENTS

a Medulla
b Larynx
c Lungs
d Song Passage
e Brain

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not think of cords without picturing a medium with the freedom of a string. We accept the term from force of habit, but from a scientific standpoint the sound producing apparatus should be referred to as a disk or diaphragm, as it is fastened all around to the larynx, having a slit through the centre. The edges of this slit are as it were rolled over, thereby forming the cords or lips. The term disk will give a better insight into the reason for the increased friction which the tipping of the larynx involves, as the movement closes the aperture and presses the disk over the ring like the lid on a box.

THE VOCAL DISK

The accompanying diagram will help the student to understand the relative position of the ring and the disk. They are of equal dimensions and fit so closely that no air can escape except through the slit, which is called

the vibratory glottis. If we then recall that the space or glottis below is specified as "respiratory" and the glottis above as "vocal," we will soon begin to understand how each fulfils the function its name indicates.

The respiratory glottis measures out a certain quantity of air pressed up from below, and as it cannot escape except through the vibratory glottis or slit, the lips or cords are thrown into vibration through the resulting friction and clip the air into puffs which constitute the vibrations that result in tone. The vocal glottis on the other hand will be filled with air from above and through its ventricles control the false vocal cords which, in their function as brakes, govern the action of the true cords.

The larynx is consequently a double valve, just as our resonator is a duplex and complex factor, which has to form the sound into speech and further, through its retoning tissues and sonorific cavities, give many varied effects to the tone. To simplify the study of these effects students should be given definite land-

marks that will furnish practical guidance and initiate them into the various means for increasing the volume of the voice without increase of physical effort.

As already explained the tipping of the larynx results in two opposite movements, that is, the soft palate springs up, stimulated to contraction through the pillars of the fauces which connect it to the upper horns of the larynx. In its contraction the soft palate rises to the level of the cheekbones which form the anatomical structure of the upper resounding dome of the resonator, called in Germany "Der Himmel des Gesanges."

The tipping of the larynx will at the same time influence the muscles below, which are connected to the tongue bone, drawing the root of this unruly member down. This movement will open the throat and thereby throw the larynx into sympathetic relation with the breast bone through the muscular bands which run from the shields of the larynx to the sternum thus securing an anatomical relation at the base which corresponds to the adjustment

at the top. In other words, the instrument will be connected at both ends to what we may term sounding boards which will reinforce the various vibrations as we may direct. The sensation we receive from these sounding boards gives us the reason for the classification of voice into three registers: head, medium and chest; and these distinctions will aid us in many ways if we associate them with the mediums which gave rise to the use of the terms. For these sounding boards are of the greatest service in obtaining variety of tone colour, and we shall see later that either can be used for the effect of many tones.

Some teachers keep their pupils' attention entirely concentrated on the head, condemning the term chest voice; but this limited attitude is apt to make the voice monotonous in colour and small in volume.

CHAPTER IX

ADJUSTMENT AND CONTROL

If the previous chapters are understood it will be easily seen how impossible it will be for students to obtain satisfactory results through practice if they begin their studies with the false conception that voice placing can be governed by exhalation, since by this mode of procedure they are attempting, as stated before, to play upon an instrument that is as yet neither correctly placed nor tensioned.

The foundation of voice training lies consequently in the knowledge of adjustment, in other words, in scientific insight into the various operations which must take place both in the body and the throat before voice can be satisfactorily produced, and this demands understanding of the progressive development of *inhalation* in its *habitual* and *voluntary* actions.

As regards voluntary inhalation in connection with our vocal organ, it must be realised as the direct medium of all preparatory development. The vocal organ being of extraordinary flexibility, should always present itself to our mind as an instrument that can be adjusted by various degrees of expansion, a realisation which will explain the intimate relation of elocution and song as we shall see later.

But before either can be applied, the student must comprehend how to connect diaphragmatic control to its superior force, as it is essential for the singer and speaker to get all physical adjustment under the habitual government of one medium, so that their entire attention can be centred on the playing upon the organ. The diaphragm as well as the lungs will continue in perfect operation when properly adjusted, as the nerves will become the medium of regulation reinforced from the upper governing centre through proper respiration.

Our lungs and diaphragm should stand in

the same relation to our vocal organ that the bellows do to the keys of the organ; that is, they must be controlled by a medium entirely separate from that which produces the tone, their regulation becoming, as stated, habitual.

The student must remember that the vocal organ should be adjusted on exactly the same principles as the body; its first action always being associated with *anatomical* adjustment, and its second with *muscular,* as pointed out in the last chapter. These two operations ought to be practised constantly *without* voluntary inhalation, in connection with the anatomical and diaphragmatic adjustment of the body, as students will never learn to distinguish between diaphragmatic and Medulla breathing unless they work by stages.

When both these physical adjustments can be accomplished simultaneously, students should begin to practise Medulla inhalations, always drawing up from the solar plexus, and they will find to their surprise that the entire instrument will be connected in complementary action involving superior tension, which,

without any further effort on their part, will result in a considerable expansion throughout the entire trunk of the body.

This discovery will give the students greater self-confidence, for they will realise that they have found the secret spring; the superior agency which nature meant should preside over all our functions. And as, by concentrated practice, this mode of inhalation increases, the student will further realise how futile it would have been to attempt to further *art* through muscular adjustments as he will now begin to understand that *muscles cannot be trained except through the nerves.*

CHAPTER X

OPPOSED METHODS

"All discords are but harmonies not understood."

In the foregoing chapters I have attempted to connect the various parts of the instrument and tried to show the mediums of its regulation.

I will now go back over the ground we have covered, and in the four following chapters once more treat the factors separately, that by this means I may show how all the apparently contradictory schools of voice culture are but small parts of one great whole.

The schools which I wish to analyse are the following:

1. The school of three registers.

2. The larynx school, embracing no less than four opposed methods.

3. The pharynx, or soft palate, school, embracing two opposed methods.

4. The resonance school, under which head-

ing I list all the modern progressive movements.

Prior to a discussion of the different schools it may, however, be of interest to mention some of the various directions and tricks used in training, as it will prove the need of scientific knowledge, since sensation without knowledge is a dangerous and deceptive guide.

1. Feel your voice entirely in your head.
2. Feel your voice entirely in your chest.
3. Feel your voice in the back of your head.
4. Feel your voice in your forehead.
5. Feel your voice on your lips.
6. Feel you voice entirely in your nose.
7. Direct your voice to your soft palate.
8. Practise with a spoon on your tongue.
9. Pull your tongue out as far as you can and let it spring back to enforce elasticity. (N. B.—This most injurious exercise is, to my knowledge, used in some of our leading conservatories, and I will later dwell on its retarding influence.)
10. Have a paper collar around your neck and keep it very tight for high notes.

11. Throw your body forward and backward in quick succession and say "Ah."

12. Hang over the back of a chair with your arms relaxed and say "Ah."

13. Run up stairs quickly and down again without moving the chest expansion and say "Ah."

14. Practise with a walking stick extended between your hands, against the back of your head, etc.

There are many more of these tricks, but these suffice to show the existing confusion.

I have had the pleasure of receiving most of these directions myself, when years ago I lost my voice as the result of ignorant tuition.

As we proceed with the analysis of the various schools it will be easy to trace the reasons for their existence, and the more we recognise the onesidedness of each method, the more will we realise that a painful number of failures or retarded successes among our students spring, not from lack of voice, but from the want of proper tuition.

CHAPTER XI

THE SCHOOL OF THREE REGISTERS

THE question of registers and breaks is one that has provoked more controversy in voice production than any other. Unfortunately it was first started among some of the old Italian masters, who though they recognised the error of dividing the voice into head, medium and chest, still clung to the terms.

The use of these terms as applied to various registers of the voice leads to most unfortunate results, as the student is made to labour disconnectedly in three different directions for attack of tone, thereby encouraging an action which must lead to loss of control over the organ since it disturbs both its position and proper regulation, which will inevitably cause breaks.

THERE ARE IN REALITY NO BREAKS IN THE VOICE.

And correct management would soon prove this. But, unfortunately, as few people either breathe correctly or speak with controlled phonation, voice is as a rule disturbed in its natural position by a faulty habitual mode of breathing before we attempt to sing: a weakness which the three register school increases, as its conflicting theories concerning head and chest voice weaken the medium. Students of this school generally become hoarse from practice; the inevitable result of such treatment of the organ.

Hence this school creates its own defects; for, as all who are acquainted with the faults of the various schools know, students of the three register school rarely have a good medium voice wherefore all who study this school arrive at the conclusion that the medium register is the most troublesome part of the voice.

One of the leading supporters of this school says that "the medium is frequently weak and veiled in all female voices." This is true, though it is not a *natural* weakness, but springs

from the fact that few women breathe correctly, hence speak with a wrong position of the organ, a fault that voice training should cure, but which the three register school encourages by permitting an unregulated position of the larynx. It consequently encourages escape of breath in the middle tones and forces both the low and high registers.

Tones should not increase in force as we ascend, but in sweetness and sonority, so that the inclination to shrillness in all rapid vibrations may be modified.

The very fact that this school discusses breaks, should prove its weakness.

Before the error of this school can be recognised, it is absolutely essential for the student to understand that the vocal organ, which produces all sound, lies in the larynx, and that it is regulated by the motor element breath through the medium of both the respiratory and vocal glottis, while the different effects in tones result from the proper use of our resonant and sonorific mediums.

If students suddenly take their attention

away from the organ which produces the sound, concentrating disconnectedly on the two opposite extremities of the resonator, and forcing in each direction for the various tones, they will not only ruin their medium, but injure the entire instrument.

Reliance upon sensation without understanding its cause, will always be one of the most confusing and harmful practices in voice culture. One of our leading voice specialists aptly says, "Every one would laugh at a man who should pretend to smell with his lips or see with his fingers; yet such claims are not one whit more absurd than those of singers who profess to fetch their voice from the back of the head, the roof of the mouth, the bottom of the chest, or anywhere else that their misinterpreted sensations may lead them to fancy." As a basso profundo is sometimes figuratively said to "sing from his boots," we may perhaps be grateful there is no "Voce di piede" among the acknowledged registers.

The result of the faulty training of the three register school led to the realisation of

many beneficial facts; among them to the necessity of keeping our attention on the organ we play upon, so that we may not lose our control over it. And in the recognition of this, we have obtained an excellent point from the register school.

CHAPTER XII

THE LARYNX SCHOOL

As the unsatisfactory results of the three register school gradually became evident, new speculations arose which led to the conclusion that the position of the larynx had been too much neglected, and that this neglect had caused breaks in the voice. But the advocators of this conclusion immediately went to the other extreme in believing that, by concentrating all their attention on the larynx, they would overcome not only the breaks, but all the difficulties of voice production. They soon disagreed among themselves and split up into four parties, each declaring the position of the larynx to be different. One said that the organ ought to remain rigid, another that it should be regulated from above, a third that it should be regulated from below, and the fourth

that it ought to move upward with every tone as the scale ascended, and vice versa.

All invented methods of their own to place the organ according to their conception of what the position ought to be, doing their best to strain the voice by telling the pupils that the larynx is immediately under the control of the will. They ignored the natural workings of the organ, and consequently strained it by aiming at a particular result without knowledge of the means they should employ.

Of the four branches of this school the one which regulates the action of the larynx by muscular force has ruined most voices. In this particular branch of the larynx school the pupils are told to think lower and lower as they ascend the scale without any regard to the relaxation or opening of the throat, the instrument being made to act by muscular resistance without aid from a superior force.

This straining of the larynx, before the resonator is understood, is equivalent to planting a delicate flower in the ground by stamping upon it. Straining will always prove a

futile process; for we cannot regulate the workings of nature without understanding her law.

The larynx school will nevertheless be shown to hold a most important position in the adjustment of voice, but as it is taught to-day its muscular action works on a wrong principle. If teachers were thorough physiologists they would know that after the larynx is tipped, it should be regulated in its action only by correct control of breath, and further, that to keep the larynx rigid for sound is impossible, as it moves slightly upon its hinges for every note, adjusting the resonator through this action to a sympathetic tension. The action of the larynx can be felt low in the throat, and no power of will could keep it rigid during song.

The contraction of the windpipe is the cause of the much discussed sensation behind the breast bone; a sensation which has led to some very unscientific statements regarding the position of the larynx. That a sensation is plainly felt upon the contraction of the windpipe is a matter of course, and it will prove of great

benefit, as it will help students to understand that the position of the larynx should be regulated through relaxation of muscles, instead of through the forced contraction which these various methods advocate. There must be no undue muscular pressure in the larynx, as it is a very delicate mechanism and forcing will eventually result in laryngitis.

That the larynx school has proved a great benefit is undeniable, because we often obtain, as Mill says, "a clearer conception and livelier impression of truth produced by its collision with error."

CHAPTER XIII

THE PHARYNX SCHOOL

When the shortcomings of the larynx school became more and more apparent scientists were as much at a loss as ever; consequently they searched in new directions, and their investigations resulted in a school absolutely opposed to the larynx school; and the arguments brought forward in favour of this new school seemed in every way as plausible as those in favour of the larynx school.

The founders of the new school decided that the larynx should not be discussed at all, but that the voice should be trained entirely through the adjustment of the resonator. They had arrived at the conclusion that since the voice obtained its quality and sonority from the resonating cavities, the cords were simply creating the primary vibrations, which,

if the resonator were properly adjusted, would take care of themselves.

This school advanced with rapid strides and is known under various names. I call it the Pharynx school, as that was the name under which I made its acquaintance, and among the various schools discussed it undoubtedly forces least and gives the most sympathetic timbre to the voice, since it involves less muscular stress in the larynx.

Its action is taught through the movements of the soft palate and uvula, which through the medium of the fauces have the power to regulate both the vocal organ and the resonator. This school gives a rounded though somewhat hollow effect to the voice. From a muscular point of view its results are excellent as a foundation, for it opens and prepares the upper part of the resonator, but in spite of these excellent points it will never produce singers, because it has, in its way, as great faults as either of the other schools; *first,* it adds to the difficulty of distinct speech; *second,* it encourages

what according to Witkowsky is even worse than strain, namely, escape of air.

Tone is obtained by friction of the exhaled air against the tensioned cords, regulated through the vocal glottis, and the constant lifting of the soft palate without having a secured base from which to operate, lessens the resistance of the organ; this method, therefore, weakens the tone.

As a result the pharynx or soft palate school induces grave faults in that it diminishes resistance and hinders distinct speech, the reason for which is apparent since the soft palate takes active part in vocalisation and is often hindered in this function by being called upon to do the entire work of the resonator. This should again prove that a thorough knowledge of physiology would be advantageous to teachers, for then they would understand that the resonator is not a self-regulating factor, but, that it is dependent upon another element for its sympathetic action.

The fault which artists found with this

school, besides the fact that it gave a hollow timbre to the voice and made speech unintelligible, was that it gave an unnatural expression to the face by the constant aiming upward of that soft palate. It was for a while strongly supported both in Sweden and in France, and remains in favour with many, though others are turning from it with undeserved abuse, as it represents an important link in muscular adjustment.

Up to the present day, the art of song has not been clearly defined in its natural development, and since the soft palate school has not overstepped the boundary in such a manner as to render song disagreeable, it is the most acceptable of all the onesided schools.

CHAPTER XIV

THE RESONANCE SCHOOL

When the soft palate, or pharynx, school began to lose its power many turned their attention towards psychology, while others were ingenious enough to find a loophole by ignoring the mechanical and creating the now leading, fashionable Resonance school.

In this school the resonator is discussed in its various functions of retoning powers and speech. New terms are being invented, pointing to advanced conceptions establishing a different standard. We are no more discussing muscles, but tones in their simple and partial effect, drawing varied distinctions between nasal and pharyngeal sonority.

Interesting as all this undoubtedly is, it has its great dangers, as through this method the student strives for effects, forgetting, or ignoring the fundamental cause. *Song cannot be*

created by effect; tone colour, overtone, covered tones and speech are all complementary, therefore secondary, in that we must know how to produce tone before we can modulate it.

This school, though promoted by some of the world's greatest singers, displays a dangerous ignorance of the vocal organ in its preparatory adjustment. Singers of great repute are rarely good teachers for the *placing* of the voice, as they are gifted with a natural aptitude for proper control and therefore take it for granted in others. From a scientific point of view they can rarely explain either perfect breath control or its actual influence on the instrument, as in most cases their own development has simply been a musical and psychological training to perfect a voice which nature or habit had already placed.

As a result, methods are being promoted which are injurious to the average singer though they originated in the statements and theories of world famous artists. Concentration on nasal resonance, so predominant in teaching to-day, is disastrous in its effects if

the singer has not conquered the fundamental principles. There is no contradiction in the fact that two pupils may go to the same master, and one be made by him and the other ruined. On the contrary, it is a most natural consequence with any teacher who has adopted a onesided method.

Therefore, to say that sonority, or the effect of partial tones created in the resonator, can govern the vocal mechanism, is as absurd as to say that light is created by the reflector. We must learn to recognise that as sounding boards are essential for the reinforcement of the primary vibrations, so are re-toning tissues and cavities essential for varied tone colour and other effects in song. We are beginning to understand that, as surely as the image in the looking glass is not the person, so is the re-tone not the actual cause.

It is bewildering, though interesting, to observe the contradictory instructions and absurd tricks to which highly intelligent and splendidly educated students will apply themselves. It seems that vocal art, through its confusing

and intricate methods, has received such superficial recognition, that unless a teacher accompanies his method with individual tricks the student has no faith in him. Nature is forgotten; art is furthered on the principle of the most limited of all terms, "Art for art's sake" instead of being realised as the language of life itself, and therefore the sincerest and most natural expression of man.

And what advice do some of the teachers of the various branches of the resonance school give to help their pupils?

To answer this satisfactorily the promoters of these methods must be divided into two distinct classes: the one representing those who teach through trickery which leads to fatal results; the other, those who realise the fact that retoning is the artistic aim of all voice training, but who employ measures that are in advance of the students' development.

Among the first, some teach their pupils to whisper, on the plea that the exhaling current must be given freedom of flow before tone is developed: which is equivalent to teaching the

violin without permitting the pupil to put the bow to the strings; nay, worse, as he could play with his left hand, whereas a whisper untensions the vocal cords and opens the vibratory glottis, thus letting the air escape, which is injurious and weakening to the cords.

Others concentrate on the action of the lips and the tongue, giving exercises to make both elastic and supple; in other words, training song through speech, and this might prove of value if the connection of song and speech were made clear and the exercises were directed so that they could reach the cause of the evil, but the exaggerated, conscious action of the lips until the face is distorted, and the pulling out of the tongue till it reaches the tip of the chin, making it rebound to enforce relaxation, will encourage faults instead of curing them.

If the tongue is at fault, it can *not* be controlled by being pulled outwards, but inwards, as the difficulty always lies in the root rising too high: a fault which, as previously stated, can be most easily corrected through the action of the larynx.

The teachers of the second class are generally using too stringent methods by forcing the voice forward *too soon,* using either the closed "Hm" or the predental vowels "I" and "E" (Italian pronunciation), which result in unmusical re-toning. The misleading statement that "La voix est une affaire du nez," which circulated from one of the world's leading artists, has led to disastrous results for many, though others who were ready for this stage, found in it the finishing partial effect needed in their art.

It is because of the tendency towards enthusiastic, indiscriminate application to any onesided *new* theory, that students must be given a scientific system. For if they were taught from the very beginning that resonance represents an effect they would understand that the operations of the resonator are complementary and their common sense would consequently demand understanding of the actual tone before they progressed to the study of the factor whose function is to reinforce and modulate the tone.

CHAPTER XV

RECOGNITION OF ESSENTIAL FACTS

A RECENT lecture by one of our leading specialists on the subject of voice brought forward the importance of training the vocal organ as a necessary part of education even when song *was not contemplated.* "What we need," said the speaker, "is a clearly defined basis upon which speakers and singers alike can ground their voices without fear of ruining them, for there can be no doubt that the voice depends *first* upon the conditions of the organs in the body."

I wish more people realised the importance of the apparently most commonplace remark, that "Voice *first* depends upon the conditions of the organs in the body," as in nine cases out of ten, voice suffers because essential health conditions are ignored.

There are comparatively few among us who

trouble to inquire into the need of health principles for the speaking voice until some unfortunate personal experience enforces the need of this recognition.

The serious consequences which arise from neglect of the factors that represent "Voice" are of such importance, that I wish to attract attention to them by specifying the many ill effects that may arise from incorrect adjustment of the vocal organ in speech.

Voice concerns all, because it involves our life current, and demands in its proper government perfect control of vital organs. Although we know that half of the sickness among our children springs from wrong inhalation, no step has been taken towards its prevention through practical, scientific instruction in our schools.

That the influence of wrong breathing and adjustment may be realised I will specify some of its effects, though it may involve repetition.

We know that faulty adjustment of the body causes round backs, slovenly carriage,

poor lung expansion, consequently poor circulation, and last, but not least, poor digestion.

Wrong inhalation, on the other hand, may lead to still greater disasters, as our throat and entire organism is dependent upon air properly inhaled. It is therefore the ill effects of faulty *inhalation* that I wish particularly to point out, hoping that I may secure the recognition of its vast importance.

The nose being the natural organ of inhalation, makes the operations of the nasal passage all important. Comparatively few realise to a full extent the terrible effects nasal obstruction may lead to, as few understand that the nose is the most important part of the respiratory organs because it filters, moistens, and warms the air, preparing it in every way for the lungs, and further that its passage leads directly to the centre of nerve control.

The mouth, which many habitually use in life breathing, should never be used as a passage of *life* inhalation, though it is the medium of speech and song. Air that is drawn through the mouth flows into the respiratory

passage and the lungs in an unprepared condition, because,

1. It is too cold, which is apt to contract the mucous membrane, resulting in catarrh.

2. It is too dry, which irritates the whole respiratory passage, and is likely to bring on coughs.

3. It is uncleansed, and consequently may carry tubercle and other germs into the lungs.

4. It can never stimulate the needed nerve energy.

It is therefore easily understood that by teaching correct breathing consumption would become rarer, as fresh air, when properly prepared, invigorates and strengthens the lungs. If we observed ourselves and our children, we could easily learn to control the act of respiration in all its various movements.

The explanation of correct breathing is so simple, yet so few recognise its importance. Activity in the nasal cavity and what this means to health, both of mind and body, is unknown to the greater part of humanity. Song has great charm, but is of small importance

compared with health. Yet until we wish to study voice culture, few trouble about the proper care of the nose and throat.

Voice culture should be looked upon as one of our most important sciences, because it demands a healthy organ before results can be achieved. The nasal functions should be the first and most important study in training, as the inhaler is the medium for the adjustment not only of the vocal organ but of our combined physical and mental poise.

The failure of the voice in public speakers and singers is due to the ignorance of these facts; wrong inhalation prevents the adjustment upon which their art depends. All the following troubles may spring from faulty respiration:

Adenoids,
Headaches,
Catarrh of the Larynx,
Coughs,
Bronchitis,
Asthma,
Swollen tonsils,
Swollen glands,
Inflamed uvula,
Relaxed and sore throats.

And, furthermore, the digestive organs will suffer, as they are directly dependent upon the circulation and nerve stimulation which correct inhalation alone can produce.

Complete nasal obstruction weakens the entire nervous system and brings on a stupor, caused by the inactivity of the brain, which is bound to follow. Even partial closing of the nasal passage must affect the nerve centres, giving the face a heavy, dull expression, as the nostrils become inactive, and the lower jaw falls down, thus resulting in mouth breathing. The irritation of the mucous lining of the vestibules of the nose and upper parts of the pharynx, which is generally the result of faulty inhalation, brings on a flushing that often has serious consequences in the throat, larynx and windpipe.

As we can close our mouth at *will,* it seems that correct inhalation ought to be an easy matter, but unfortunately many are born with an affection of the mucous lining, which is easily increased by impure air or careless breathing. A child often starts life with a cold in

the head, as the change of temperature at its birth is a shock to the system; and though slight colds in the head are considered of small consequence, they are often the beginning of the whole ensuing trouble. A baby will quickly form a habit of breathing through the mouth, thereby unfitting the nasal muscles for carrying out their function, wherefore they naturally grow weak, and thus with many partial mouth breathing becomes second nature.

Most of us have experienced the extremely unpleasant feeling of dryness of throat arising from mouthbreathing during sleep, which is due to lying in a position that causes the partial closing of the nasal passage. The irritation that arises from habitual breathing through the mouth is therefore easy to understand, and the dryness of throat from which so many public speakers and singers suffer springs, as a rule, from the fact that they are all inclined, when nervous, to draw sharp, short breaths through the mouth. This trouble can be easily overcome by closing the mouth firmly for a few minutes before per-

forming, drawing in breaths through the nose up to the Medulla, an action which will set the nasal valve in activity creating the needed water: an exercise which would overcome not only dryness of throat but nervousness, as correct nasal breathing stimulates control.

It is unbelievable how comparatively few among us really breathe correctly and consequently have perfect poise. As yet it is not understood how closely our entire physical adjustment bears upon art, as the proper activity of our nerve system is intimately dependent on the poise of the body and therefore directly under the influence of inhalation. The healthy activity of the nasal functions is the first principle of health; and if the dilating valve, which ought to move with each respiration, is not in perfect action, the narrowest part of the passage will soon be obstructed.

Therefore, when we realise that song and correct speech are dependent on a healthy organ, and that comparatively few live in such a way as to secure perfect health, we can understand that song and speech have small chance

for development, and that those who are obliged to use their voices as a means of livelihood, can hardly pay enough attention to the necessity of keeping the organ healthy.

PART II

The Nature of the Vocal Organ and Its Various Operations in Speech and Song

"Before you can possibly be safe in dealing with nature, you must get two or three kinds of cross-proofs, so as to make sure not only that your hypothesis fits that particular set of facts, but that it is not contradicted by some other set of facts which is just as clear and certain."

—Huxley.

CHAPTER XVI

THE OPPOSED THEORIES OF REED AND STRING

As we advance towards the *actual* use of the vocal organ it becomes of great importance to recognise the similarity of our instrument to both the string and the reed instrument, as we may obtain effects that will prove of inestimable value through this recognition, and further be able to understand many of the conflicting sensations that hitherto seem unaccounted for in the development of vocal art.

It was the conflicting statements of different schools that stimulated much of my research and led to discoveries which became the links connecting their apparent contradiction, as each method proved to be based on some essential fact. Consequently, I came to believe that all earnest investigators must have good reasons for their various opinions as regards the nature of the vocal organ.

I will, therefore, give an outline of these opinions, believing they will eventually lead to as helpful recognitions as those that were enforced by the analysis of the various schools.

The late *Sir John Morell Mackenzie* says: "The larynx is a musical instrument unique in construction, which cannot, strictly speaking, be classed with any other sound-producing apparatus. It bears a close resemblance, however, to the so-called reed instruments, though differing from them in several important points. Reeds are of different kinds, but the essential feature in all is that they break up a continuous current of air into a series of jets or puffs. Two chief varieties of reeds are used in the construction of musical instruments. One consists of a thin plate or 'tongue' of metal or wood, one end of which is fixed, whilst the other extremity hangs free in the cavity of a tube, or partly covers an opening after the manner of a valve. The action of such a reed when the loose end or edge is set in motion may be compared to that of a pendulum oscillating about a fixed point.

When a blast of air is driven along the pipe it strikes the reed, throwing it upwards a certain distance, the tongue then returns by virtue of its elasticity, to its former position, when it is again pushed up and so on; in other words, the reed is thrown into vibrations, and a sound is produced of a pitch corresponding to the length of the vibrating body. The longer the reed the deeper the note and vice versa. Tongues of this kind may be either single, as in the clarionet, or double, as in the hautboy. Another class of reed consists of plates or disks, which fit into or cover an opening in a tube, without, however, being in actual contact with the edges of the aperture which they close. A familiar example of this arrangement is seen in the tongues of a concertina. The vocal reeds do not resemble either of the kinds just mentioned. They are elastic membranes which must be stretched between their fixed points of attachment before they can be made to vibrate. This is effected by the action of the various muscles acting on the cords. And the degrees of tension can be al-

tered, and the vibrating element lengthened or shortened at will, so that one cord serves the purpose of many reeds of different sizes, a triumph of economy of material combined with perfection of mechanism, to which there is NOTHING COMPARABLE IN ANY MUSICAL INSTRUMENT MADE WITH HANDS."

Helmholtz says: "The vocal cords have the advantage over all artificially constructed tongues of allowing the width of their slit, their tension and even their form to be altered at pleasure with extraordinary rapidity and certainty, at the same time that the resonant tube formed by the opening of the mouth admits of much variety of form, so that many more qualities of tone can thus be produced than on ANY INSTRUMENT OF ARTIFICIAL CONSTRUCTION." And on page 97 (Sensation of Tone): "Only two kinds of membranous tongues have to be considered as musical instruments: the human lips in brass instruments, and the human larynx in singing."

Floyd Muckey, M.D., C.M., says: "In order to decide whether the voice is a string

or a reed instrument we must know something of the nature of vibrators, or tone originators. Any substance to act as a vibrator must be elastic; a certain amount of rigidity is essential to elasticity, therefore every vibrator must possess rigidity. A reed being free at one end must have inherent rigidity; therefore reeds are constructed of such materials as metal, wood, ivory. A string, on the other hand, has not this inherent rigidity, and cannot be made to vibrate rapidly enough to produce tone without the applications of tension, and tension can only be attained where there are attachments at both ends, and this is the condition of the vocal cord, therefore, the vocal apparatus is a stringed instrument.

"There is, however, other evidence in favour of the string theory which is just as conclusive as the foregoing. The partial tones of any instrument are produced by segmentation of the vibrator. A string, for example, having the same conditions at each end will vibrate in equal segments, while the reed, being free at one end, will break up into unequal segments.

For this reason, the partial tones of the reed will be entirely different from those of the string. If the vocal cord vibrates after the manner of the reed, it certainly will have the same series of partial tones as the reed. If it vibrates like a string, it will have the partial tones of a string. Upon investigation we find that the vocal cords produce precisely the same series of partial tones as the string, and therefore the vocal apparatus must be a stringed instrument. We find that there are five overtones in the voice before we come to the first overtone of the reed. If the voice is a reed instrument, where do these five overtones come from? We never by any chance find the overtones of the reed in the voice, therefore the statement that the vocal cords are reeds cannot be true.

"This will be more fully explained when we have come to consider quality. Having decided that the vocal cords are strings, it then becomes important to know what the laws are which regulate the pitch of a string, because

these laws must be applicable to the regulation of the pitch of the vocal cords.

"There are three things which determine the pitch of a string, and these are length, weight and tension; the shorter the string the higher the pitch; the lighter the string the higher the pitch; the more the tension on the string the higher the pitch. Lessening the length of a string one half raises the pitch one octave; lessening the weight of a string one half raises the pitch one octave; while we must quadruple the pulling force to raise the pitch an octave by increased tension. It is very important to understand thoroughly these laws of vibrating strings, because it is the lack of their application to the vocal cords which causes a great deal of the straining of the intrinsic muscles and the ill effects which follow."

Dr. J. S. Bristowe, F.R.S., says: "The larynx is not a stringed instrument in the usual sense of the term." Farther on: "It is clear that the larynx, if not a true reed instrument, has at any rate very special relations to it. Let

us consider now, with particular reference to the above remarks, how the larynx acts in the production of sound. Whenever we are about to speak or sing the vocal cords are made more or less tense, and brought into close opposition, they touch one another in their whole length and the space between them is obliterated. Then with more or less force, through the agency of the muscles of expiration, we drive the air accumulated in the lungs outwards along the bronchial tubes and trachea to the larynx and through the rima glottidis, whence it passes outwards to the nose and mouth. The forcible transmission of air between the closely approximated and tense vocal cords throws these latter into synchronous vibration, and determines the passage of the air, not in a continuous stream, but in a series of jets or puffs, which correspond in frequency to their vibrations. So far it is clear that we have a reed instrument to deal with; but it is a reed instrument that in the main obeys the laws of strings and determines the notes of the voice in accordance with these laws."

Hullah says: "The vox humana of the divine artificer is an incomparably more beautiful instrument than any of its compeers. Fearfully and wonderfully is it made. Not only is its mechanism more intricate, not only are its component parts more numerous and more delicate than those of any artificial organ, but the action of these is complicated by a condition from which every other instrument is free. The instrumental performer has merely to play; the vocal performer has not merely to play; but to say—and both at the same instant. . . . There is no saying without (some) singing; that which is effectively and agreeably said must be (partially) sung. 'Est in dicendo etiam quidam cantus abscurior.' "

These contradictions will, I trust, vanish in the realisation that the human organ is superior to all instruments and has it within its power not only to produce their various tone qualities, but to excel the effect of any mechanism constructed by human hands.

CHAPTER XVII

THE FUNDAMENTAL CONTROL OF TONE

All teachers and singers accept the old Italian master's motto, "He who knows how to sing knows how to breathe."

But this apparently simple statement involves actions that appear contradictory, since during singing the control of breath must act in opposition to the breath action we use for the preparatory work of adjustment. The poise of the body and nerves can be obtained only through habitual or voluntary *nasal* inhalation, drawn up to the nerve centres of tension, whereas during song or speech all breath control is governed through *the mouth.*

It is the difference between breathing for adjustment and breathing during actual song or speech which has created so much confusion in voice culture. To build the instrument, that is to expand it, govern its tension and point of

resistance, is one thing, to play upon it is another. Consequently breath control for voice consists in a twofold action, as it is not only the propelling force, but also the resisting and regulating power; and we should be taught to concentrate on these modes of action as separately as does an organist on the various preparatory adjustments of his organ.

We must learn to have our "bellows" under the reliable government of habitual poise, that we need offer them no thought, so that our entire attention may be centered on tone production, which is regulated through the vocal glottis, governed directly by mouth respiration, as air cannot enter the vocal glottis through nasal breathing when the organ is adjusted in song.

This will involve new principles in singing and an understanding of control quite the reverse of that commonly accepted, as breath will now become the all important medium of direct resistance, while before muscles were considered the means of control. Consequently, the tipping of the larynx with its disk closing over the

upper ring of the windpipe will be looked upon as a preparatory movement which tensions the vocal cords, and secures the firm closing of the vocal cords or valves over the respiratory glottis to check the outflow of air, thereby creating a muscular resistance which, however, is entirely governed from above by the inflow of air through the mouth into the vocal glottis. Thus the lungs and diaphragm become nothing but habitual forces supplying air to the respiratory glottis, above which the vocal glottis regulates the vocal cords through the medium of the false cords.

This mode of singing will open the student's eyes to the fact that we should *place* our voice by the perfect control of *inhalation* not exhalation, which gives an entirely new aspect to the preparatory work of voice. This mode of practice will open the throat, regulate the position of the larynx and, further, govern the root of the tongue, securing the deep groove in the centre which involves the relaxation needed for perfect vocalisation. This open throat position should however be exercised *entirely* on

the open throat vowel "Ah," the reason for which will be fully explained in the lessons.

Tone production governed by the vocal glottis is in opposition to modern conceptions, since almost all schools associate tone with the pressure of air forced up from below, propelled by the diaphragmatic action against the vocal cords. As Doctor Bristowe says, "With more or less force through the agency of the muscles of expiration, we drive the air accumulated in the lungs outwards along the bronchial tubes and trachea to the larynx."

But this is just what students must *not* do, as it will strain their voices. In fact the vocal glottis practice will prove still more beneficial to students if they can entirely forget that they have either bronchial tubes, lungs or a diaphragm, as these should all become automatic factors through habitual poise. Each breath in this mode of practice should at first be directed down and back filling the vocal glottis, and the student's entire attention should, for a while, be kept on the vocal organ even when the air is felt to influence every muscle which

stimulates the rising of the soft palate on one side and the tension of the muscular bands that connect the larynx to the breast bone on the other.

This mode of practice will automatically influence the motor spinal accessory nerve which in association with the pneumogastric and other nerves combines the actions of the larynx, pharynx, lungs and windpipe in sympathetic co-operation without *any voluntary effort on our part.*

The independent action of the various elements of voice interested me greatly during my work among the consumptives in Paris, as many of them had beautiful resonant voices which, then, puzzled me greatly, since most of them had very poor lung action. At that time I was ignorant enough to believe that lung expansion was an essential factor in a rich, vibrant speaking voice. But it did not take me long to realise that sonority and beauty of tone are entirely the result of throat respiration which affects the vocal glottis.

In fact the chest may totally collapse yet the

throat expand, and the larynx be drawn to the lowest resisting position; while on the other hand the chest expansion and diaphragm action may be exercised to its fullest extent without *in any* way influencing the throat; these two elements being as independent in their adjustment as our two hands, though, like them, they must be trained to work in perfect co-operation; and this can result only through practical application of nerve respiration *after* physical poise has become habitual.

It is all important that students should learn to discriminate between tones which are the result of proper breath control and of forced muscular action, since tone in its various effects should always be the outcome of voluntary breath control which directly influences the nerves, thus regulating muscular action automatically through its proper medium.

The student of song will find the greatest help in the exercise of the local glottis as it ensures speedy results, giving purity of tone and extension of register, overcoming tremolo if applied according to the directions given in

the lessons. But as the mastery of the vocal glottis operation is gained the student will realise that other qualifications of tone are needed, as there is not sufficient sonority or resonance in this mode of production to give voice a rich, vibrant character; besides we have to learn to combine vocal tone with speech.

Voice will, therefore, have to be studied in stages, in its progressive development of tone colour, reinforcement and vocalisation, since in obtaining and controlling perfect *vocal* tone we have obtained only the material of our art.

Song then begins its psychological development when voice *is* placed, since our studies, which till then have been preparatory, have been confined entirely to physiological processes.

If during these preparatory stages the student applies himself consistently to *one* systematic mode of practice, he will conquer the control of all the operating factors in a comparatively short time; because this being the adjustment nature demands, it will soon become habitual.

CHAPTER XVIII

RESONANCE AND VOCALISATION

THE vocal organ, unlike any other instrument, has to fulfil a double function. We have not merely "to sing, but to say" in addition to the rendering of manifold variations of tone-colour and sonority needed for the interpretation of dramatic art.

Consequently, the sweet tones resulting from the control of the vocal glottis need reinforcement and modulations which can be obtained only through the sonoric cavities and retoning tissues of the Resonator.

This recognition will strengthen many of the arguments which are prevalent to-day in the progressive method of the French resonance school; just as it will strengthen some of the ancient arguments advanced by Ferrein, who likened the voice to a violin.

On the same principle that the larynx has

a double action so may our resonator or mouth be said to have double functions, as above the soft palate we have the resonating passage which the old French masters termed "Arrière bouche" connecting directly with the nasal and facial cavities from which the tones obtain their most sympathetic co-vibration and tone colour.

The modern French school directs the exhaling current directly to the retoning tissues stretched over the sonorific and resonant cavities of the upper and front part of the resonator, thereby giving the voice the reinforcement which accentuates the effect of voice as a string instrument.

It stands to reason that when the breath is so directed it must obtain the primary vibration or tone passing through the vibratory glottis, and that this tone can be reinforced in the various parts of the resonator as we may direct; many varied effects thus being obtained according to our understanding and application.

Realising this we must recognise the important fact that voice can be used *with* or *without*

the sonority accentuating the reinforcement of the partial tones which have led so many to argue in favour of voice as a string instrument. But as voice has the unique power of being able to produce both simple tones and compound tones with various partials, it may claim relation to both reed and string. And it will prove invaluable to the student to understand the reason for this on such scientific principles that he may be able to produce either effect according to the demand of his art.

Consequently, it becomes of importance to know that the larynx is a double valve and that voice can be produced by the propelling power of air in either glottis according to our will, or habit; the vocal glottis governing from above in all vocal effect; the respiratory glottis governing from below in all compound effects. Which leads to the remarkable conclusion that song can be produced equally well both during inhalation and exhalation, which will be fully explained in the progressive lessons.

Ignorance of this constant interchangeable,

complementary action of respiration is the cause of the varied and apparently contradictory sensations which have occasioned so much confusion in voice culture; and any one who attempts to construct a complete system out of the onesided results of either action will cultivate serious faults.

The resonator through which the voice is governed in the end should be looked upon as a circumference, upon which our vowels have their distinct positions; wherefore vocalisation will represent the most important aid in voice culture. A practical understanding of vocalisation is the only medium that can solve the difficulties in training as each vowel will help us to understand operations in the tongue and resonator that we could never learn to govern except through their aid; operations which also must become habitual through voluntary training.

This will be made very clear in the lessons as it is through the practical application of vocalisation alone that song can be trained.

The position and character of the different

vowels will also enforce new recognition as regards the various oppositions among the French, Italian and German methods, as we shall find that each language has its predominant open or closed vowel sounds and that consequently voice placing must be greatly influenced by the characteristic vocalisation belonging in every language as the vowels are either predominantly sonorous or nasal as in the French language, or open-throated, as in Italian, or pharyngeal, as in German.

Vocalisation being, therefore, the unrealised cause of much controversy; a fact that shall be referred to in the following chapter, when speech begins to represent an important element in the training of voice.

CHAPTER XIX

SPEECH

THE training of the speaking voice is by many considered as opposed to the study of song, wherefore I am anxious to combine their progressive development in the closest relation.

Unfortunately speech becomes habitual with most of us without any practical understanding of how it ought to be controlled; it is generally in song, elocution or public speaking that we first realise its difficulty, which shows that there is something in the position of the vocal apparatus, when used with increased phonation, that is apt to disturb the organs of speech.

To make speech audible we know that there must be phonation which always issues from the vocal organ. With some this sound is musical, with others without timbre and even un-

pleasant. This difference springs simply from the habitual manner of inhalation; and as there are comparatively few who know what represents correct inhalation, the larynx is rarely placed in its natural position of resistance; a beautiful speaking voice consequently being very rare.

The question of correct speech is of vast importance and should not primarily be approached as *art,* but as part of *the science of life.*

We are unfortunately brought up with the mistaken idea that the timbre of the speaking voice is a natural endowment; but with very few is this the case, as only a very small percentage speak with the voice adjusted as nature intended.

The necessity for applying scientific knowledge in the use of the throat, is as great as in the case of the other bodily functions. If throat regulation were understood as a result of nerve respiration exercised through the nasal cavities, it would overcome almost every form of throat trouble. Tonsils could not grow, nor

could adenoids form. The understanding of the rudiments of proper throat adjustment in connection with chest expansion, secures an absolutely perfect condition for speech. Unlike song, no further regulation of the vocal cords or larynx is needed, as the larynx adjusts itself automatically for speech according to our habit of inhalation; speech therefore, involving the first position of phonation from which song develops.

The common error in training the speaking voice is that, as in singing, it is generally directed through muscular control, therefore constantly forced back into the throat or chest. Muscles, as stated before, should be looked upon as means only, their operation being regulated by inhalation and voluntary control of exhalation.

If teachers impress upon their pupils that breath control governs song, they should be doubly careful to impress the same principle in the training of the speaking voice, as there is nothing in its perfect control that involves muscular resistance, whereas in singing, muscles

must be adjusted in increased tension through the actions of the vocal glottis as a lowered position of the organ, increasing resistance is absolutely essential in song.

In speech no such conscious increase of muscular tension is essential, proper inhalation controlling all needed muscular operations automatically and habitually unless we have neglected to obey nature's law. When greater power of phonation or sound than that used in ordinary speech is needed, it should always be secured through nerve respiration from the larynx to the Medulla, which increases the resistance of the instrument automatically.

The system of nerves in connection with the various functions of speech is so miraculously wrought that stammering and stuttering will be overcome when we realise its simple control, whereas undue muscular action will always involve irritation. It is, as we must remember, nerve respiration which secures the beautiful voices of so many consumptives, who, by their habitual breathing, obtain perfect position in one of the elements of voice, while on the other

hand they neglect the proper activity of the lungs through a faulty habitual poise of the chest.

The speaking voice is one of the most misunderstood powers in life. It far outweighs the power of song, as it is a universal faculty and plays an important part in our every-day life. It has greater intimacy and extends its influence into far deeper channels than song could possibly reach, as it is the individual form of expression used by all and *reaching all.*

It is a living, psychological element! Here we do not *primarily* play upon a vocal disk, but upon the ear drums of those to whom we speak, wherefore, voice ought to be recognised as a flow of vibrations travelling from the speaker's lips to the listener's ear. I believe Walt Whitman is right when he says of voices, "I have found nothing mightier than they are."

Magnetism in voice is rare because the vocal organ as a rule is governed automatically or habitually *without* the needed voluntary influence which mind should exercise, since the modulations of voice, when its adjustment is

understood, should come directly under the government of our psychological powers.

Unfortunately, speakers are frequently so hampered by the muscular action of the voice that they find it impossible to express their thoughts freely and clearly, thereby preventing the magnetic current which is due to the living, pulsating movement of thought activity. For voice is a touch, transmitting vibrations which influence the listener's ear to sympathetic movements, and when the exhaling current carries thought vibrations which touch the finer sensibilities it will stir a magnetic response in the listener, because the speaker has magnetic qualifications.

Therefore, why is personal magnetism so rare?

Because most of us speak to hide our deeper, truer thoughts; human feeling and longings generally being stifled in our conventional attitude to life; speech therefore rarely serving its intended purpose of self-expression. As Max Müller said: "Speech is an instinctive and irresistible faculty of the human mind,

which impelled it to give articulate expression to its conceptions."

Some time ago I wrote an article on voice in connection with the drama, part of which, I believe, may prove of some interest here.

"The question of the speaking voice has not received half the attention it ought in dramatic training, since the drama stands in the closest relation to the life of man, and the voice is its most intimate tool. Comparatively few have realised the significance of voice; for not many understand that voice is a touch, a living movement flowing from the lips of one human being to the ears of all who listen! Nor have many realised that this voice should carry three distinct vibrations.

"First: Sound.

"Second: Sense.

"Third and chief: Thought and feeling.

"On the stage at least we speak not to hide, but to interpret our states of mind. Unfortunately false conceptions of what beauty of voice really means have led a great many to

a very mistaken mode of training. The study of elocution has often destroyed the psychological power of the voice. A great many actors *'elocute'* at us, affecting a vibratory timbre, which may show evidence of careful training both in tone production and enunciation, but which in the speaker's anxiety to preserve these qualities fails to convey the sincerity and deeper meaning that the psychological drama demands. Hence there is a most decided line of demarcation between artists who can interpret the drama portraying the tragedy of matter, and those who can interpret the drama portraying the tragedy of mind.

"A magnetic voice like Duse's, for example, does not hold us spellbound because of its tonality, but because of the feelings and thoughts she expresses through the medium of her voice.

"When the actor realises that the charm and power of the voice is obtained only through sincere feeling and thinking, magnetism will

be more general, instead of being, as it is today, the rarest of dramatic endowments.

"Consequently, as writers assert, the success of the psychological drama is dependent not only upon the awakening of the people, but upon the actor's full realisation of what the voice should represent. The greater part of the audience is ready to respond, if the right cord is set vibrating, for the world is longing for simpler, truer conditions. Hence the success of the psychological drama depends, perhaps, more upon those who give than upon those who receive."

This article which was written for a dramatic purpose, may be applied to our daily life also. I believe comparatively few realise fully what an unsympathetic voice may do; how it may discourage! For there is nothing that carries a more direct message than the intonation and modulation of the voice, nor is there anything else that in the same time can be the means of creating happiness or unhappiness, as its vibrations unconsciously lay bare every hidden attitude of mind. As Rosetti says:

"Whose voice, attuned above,
All modulation of deep-bowered dove,
Is like a hand laid softly on the soul;
Whose hand is like a sweet voice to control
Those worn tired brows it hath the keeping of."

CHAPTER XX

THE SCIENCE OF SOUND AND VIBRATIONS

STUDENTS have great difficulty in connecting the law of vibrations and physical acoustics with æstheticism, which is natural, since the connection of the two is extremely difficult to make clear. As a rule, singers remain in absolute ignorance of the laws of vibrations and acoustics, for they are naturally guided in their song by a good ear and feeling, as music stands in much closer connection with pure sensation than any of the other arts. Hence its effects depend mainly on physical action.

Helmholtz says: "The plastic arts, although they make use of the sensation of sight, address the eye almost in the same way as song and poetry address the ear. Their main purpose is to excite in us the image of an external object of determinate form and colour. The spectator is essentially intended to interest

himself in this image and enjoy its beauty; not to dwell upon the means by which it is created. It must at least be allowed that the pleasure of a connoisseur or virtuoso in the constructive art shown in a statue or picture, is not an essential element of artistic enjoyment."

Most singers feel this intuitively in their art, and are bored with the tedious study of the science of vibrations. But though a good ear and feeling may be a safe guide in singing, the knowledge of the laws of sound and vibration ought to be familiar to the singer to a certain extent, as well as to all teachers of song and elocution, even though such knowledge may not appear at first to have any practical bearing upon the subject.

All musical sound is created by periodical vibrations carried to our ear through the medium of the air-ocean, which acts upon our hearing apparatus and throws it into similar vibration.

Sounds or tones being either simple (pendular) or compound; the latter consisting of various simple and partial tones.

Chest & head
feel vibrations

SIMPLE TONES are sweet, but wanting in power.

COMPOUND TONES are rich and powerful, according to the manner in which partial tones are sounded. If the upper partial tones are very distinct the voice becomes harsh, if the lower upper partial tones are well sounded up to the sixth partial, the tone will be rich and musical. Wherefore the partial tones determine *the quality of the compound tone.*

This classification of tone means very little to the average student, as hitherto vibrations have been made to bear far too little on the actual production of tone. If we, however, consider the various arguments brought forward to decide what kind of an instrument the vocal organ is, we will find that they are invariably based upon the analysis of vibrations, their law consequently playing an important part in voice training. One of our leading specialists says: "It is the lack of their proper understanding which causes a great deal of the straining of the instrinsic muscles and the ill effects which follow."

How then are we to apply these laws to our organ in such a simple manner that they may prove of practical assistance?

By realising that the voice has the power to produce both simple and compound tones, and that we can control the varied effect of compound tones by understanding how to use the re-toning tissues in the nasal and pharyngeal cavities.

Flutes produce simple tones; while the reed and string instrument produce complex tones which differ in number of partial tones. As the voice has the power to produce tones with the same number of partials as string instruments, many scientists claim the vocal organ to be essentially a string instrument. But we will find on investigation that the voice has the power of producing the most surprising variation as regards partial tones, as by controlling the action of the various re-toning mediums we can increase or lessen the number of overtones.

Tone colour, covered tones, simple tones, compound tones will ere long become familiar

terms to the student, wherefore the study of vibrations and their law will become essential in all progressive voice culture. Upper and lower partial tones will play a very important part in the regulation of tone colour as the student will learn the significance of the fact that the quality of tone is determined by its partial tones.

"The series of these upper tones," says Helmholtz, "is precisely the same for all compound musical tones, which correspond to a uniformly periodical motion of the air. The whole sensation excited in the ear by a periodic vibration of the air we have called a *musical tone.*"

Such a tone has three component parts:

1. Quality.
2. Power.
3. Pitch.

THE QUALITY OF TONE depends on the form of the vibrations, which also determines the occurrence of the upper partial tones.

THE POWER OF TONE depends upon the

greatness or amplitude of the vibrations and upon the density of the air.

THE PITCH OF TONE depends upon the rapidity of the vibrations, musical tones rising in pitch with the number of vibrations.

Vibrations are air waves set into motion by the sounding body, and the process in the air is exactly the same as that on the surface of a body of water when a stone is thrown in; waves advancing in all directions, and expanding in ever enlarging circles. The particles in the air move periodically backwards and forwards, setting the adjoining particles into motion, till they return to their original position. And so the adjoining particles influence others, the waves extending throughout the air-ocean until interrupted by some obstacle. If they touch an opposing surface they will return and thus create what we know as an echo; sometimes we hear it, sometimes others hear it, according to the direction in which the opposing surface compels the air waves to travel.

The ear is the medium of the sensation of

1 this
2. [illegible]

sound, and is most wonderful in its construction. It can generate many kinds of sensation according to the action of the air waves which throw it into vibration.

"THE PHYSICAL ACOUSTIC IS ESSENTIALLY NOTHING BUT A SECTION OF THE THEORY OF THE MOTION OF ELASTIC BODIES; THE RAPIDITY OR SLOWNESS DOES NOT AFFECT THE LAWS THEMSELVES IN THE SLIGHTEST DEGREE."

Every form of wave that touches the ear produces a distinct and separate sensation; wherefore a musical sound can be easily distinguished amidst noise, and after some practice most of us can follow the progression of the different voices in ensemble singing or of the different instruments in the orchestra.

"The sensations of tone are the material of the art. And the theory of the sensation of hearing is destined to play a much more important part in musical æsthetics than, for example, the theory of perspective in painting. Those theories are certainly useful to the artist, as means for attaining the most perfect representation of nature, but they have no

part in the artistic effect of his work." In music, on the other hand, no such perfect representation of nature is aimed at: tones and the sensation of tone become the direct material of our art, the medium upon which and through which we can impress and transfer the innermost thoughts of our being.

The recognition of tone as the material of our song will lead us to profound recognitions, as tone will need many varied qualifications, first, in its simple or partial effects, second, in its psychological import, as we sing to interpret feelings; song, therefore, standing in the closest relation to psychology.

CHAPTER XXI

PSYCHOLOGY

"And pure the pearls, of matchless beauty they,
Yet purer still her voice, for there was soul therein."

PHYSIOLOGY and psychology constitute the chief divisions of the science of voice culture: one giving us knowledge of the agencies we employ, the other developing our artistic and dramatic ability.

The present use of psychology as a basis for voice training is direct evidence of ignorance as to what psychology represents. And this becomès particularly confusing when teachers tell their pupils that the government of breath in song or elocution must be psychological; which is one of the common errors of the day. The mistake lies in a false conception of nerve control, since there are many who, when we enter upon the application of nerve stimuli, consider it a psychological phenomenon,

whereas our nerves are just as actual as our bones and muscles, and the control of nerves through practical application of inhalation, just as physiological as any other form of adjustment in the body.

The misunderstanding of psychology as used in voice production, springs largely, I think, from confusing its component parts which are:

1. Cognition—knowing.
2. Volition—will.
3. Feeling—affective states.

By the study of psychology in voice training I mean the development of personality and temperament that we may be able to give individual interpretation to our art, and thus be fit to render the work of great masters. Then alone will our study of this much misunderstood art become perfect in its development, that is, represent the language of the soul.

But, on the other hand, some take psychology to represent simply *the will* to do and *the mind* to understand; and from that point of view psychology must necessarily become

the fundamental basis of all science, as it stands to reason that to learn anything at all we must have *a mind* to grasp and *a will* wherewith to exercise our mind. As Sully says: "To be able to fix the thoughts on a subject is the prime condition of all mental achievement, whether it be intellectual, scientific, literary or practical affairs."

But if we enter upon any particular study we take it for granted that we have a will and mind wherewith to achieve, psychology therefore remaining subjective, so that we may concentrate all our attention on our object.

In the study of voice production our *first* object is to get the organ under control, so that the voice may be in a condition to become the medium through which we render our sentiments.

Turn it as we will, the fundamental basis must remain practical, and it is one of the teacher's most difficult tasks, but one by which he will prove himself capable or otherwise, of creating interest in the students throughout the progress of their studies.

If teachers had sufficient knowledge of the vocal organ, the elementary stages of voice production instead of proving drudgery, would yield great results through the opening of new fields to the students' view. But as students frequently do not understand what is demanded of them in voice placing, they show a natural inclination to hurry away from work which appears uninteresting, so that they may reach that which holds a strong interest for them.

Teachers are often entirely to blame for this condition; but there are, on the other hand, conscientious masters whose pupils are too impatient for quick results to take pains with the preparatory stages.

A singing teacher's life is bound to be full of disappointment. He may have pupils with good voices and no temperament, or with temperament and poor voices, which after all is not strange, since the causes from which they spring are opposite, and the perfect balance of the two, which constitutes a perfect artist, very rare. The voice is physical, the tempera-

ment psychical; a good voice, therefore, being dependent on perfect physique and the temperament on mind, will and personality.

Dramatic art is the cry of the day, and though it is undoubtedly greater than the old lyric form it is also more difficult: it is the development of the old cantabile style, and should hold the old Italian school in its grasp, as we know the greater contains the lesser. But as the art of song stands to-day, pure cantabile singing is almost lost, being constantly replaced by a forced timbre which is accepted on the plea that it represents the modern school of dramatic art.

But when Wagner stepped forward with his revolutionary ideas, he did not intend that the beauty of perfect vocal production should be destroyed, he rather laboured to add human qualities to it, that it might not merely be handled as a perfectly regulated machine, but become the medium of human sensations. He did not mean that the practice of simple sweet tones should be neglected in our greater effort to interpret the suffering of love and passion,

he felt new colour and deeper intensity had to be added to simple vibration through the progressive understanding of compound effect. Wagner knew that song, as it was represented by the old school, was nothing more or less than an exquisite instrument; a mechanism in which he desired human qualities. Music had become to him a dramatic medium of human emotions; its conventional lyric form had faded in his effort to reach the tragedy of human life. Hence, Wagner revolutionised our conceptions in leading us away from old conventions.

Let us not, therefore, make the mistake of thinking that in our broader development of singing we can ignore the old Italian school. On the contrary, we must understand it, keep its principles and add to them, realising in full that so-called dramatic art is the last touch by which we may make, but also mar, our song.

Hence, any voice, be it in elocution or song, which has become the medium of expressing true feeling, is the most perfect art; while any voice, which is regulated only by understand-

ing of the mechanism of the organ, proves nothing more than a perfect instrument—a pearl of value, but without a soul for all that.

In the first stages of the study of voice production pupils must look to their masters for actual help and knowledge—in the second they receive guidance from him, since they must possess the creative power within themselves. But though a master cannot create a temperament, he should have the power to teach his pupils to understand what temperament really is, and cure them of absurd affectations and mannerisms which we so often see confused with dramatic gifts, and in which both singers and speakers, too conscious of themselves, forget to consider either the writer or the composer.

Masters who are fitted for their work will make their pupils realise that all art which is worthy of the name, is simple and sincere, and above all, treads the paths of nature, for song must be realised as art for life's sake, and not as a means to express petty personal feelings, or to attract petty personal attentions.

Song, like acting, is looked upon with too much sentimentality, amateurs and many professionals alike believing that both demand some assumed manner, some kind of disguise, instead of which both are given us, that we may for a brief space throw sham aside and let our innermost feeling speak unhampered by the cloak of conventionality.

Such acting and such singing will appeal to all because they are inspired by that which remains the only absorbing and controlling power in the world: HUMAN FEELING AND SYMPATHY.

CHAPTER XXII

APPLICATION

THE conventional attitude towards the art of voice culture has been one of the greatest hindrances in the student's development. It is a strange fact that the average teacher still approaches this important science on such conventional principles that, as a rule, the effect of this great art becomes too artificial.

There was strong reason for the old-fashioned belief that speech and song are antagonistic in their methods, as, according to the old school, song was in no way regarded as glorified speech: pure tonality and lyric effect constantly sacrificing perfect enunciation.

The labour of all progressive teachers to-day is to combine speech and song, and if the pupils were taught vocal art through practical, progressive application, they would learn that all apparent contradictions are essential parts of

voice culture; speech and song being governed by one great principle.

The great difficulty of training the vocal organ lies in want of understanding that voice has two equally important though opposed powers, for it can produce perfect vocal effect without speech, and also produce perfect speech while governing vocal tone. The latter is perfect art and it is towards the realisation of this great process that the revolutionary conceptions of to-day are guiding us.

While learning to produce pure vocal effect, we accept the old time advice that speech should be considered *no* part of song, but *only* as a preparatory step toward the greater modern understanding that no voice is perfectly trained until vocal tone is so habitually governed that it cannot only be associated with speech but gain part of its effect by being so associated. Few realise that the difference in methods of training is due to want of understanding the scientific relation between song and speech. Because of their apparently opposed actions and positions they lead to great

confusion for the student who constantly receives contradictory directions without being given a satisfactory reason. There are comparatively few teachers who can meet Cicero's demand "First define your terms!" Students are told to exercise *will* and *mind,* but unless they are told what they are to do and *why* and *how* they should do it, such advice is useless.

Teachers have hitherto pleaded "want of application" as a standard reason for failure among their pupils, and though undoubtedly this is occasionally the case, we are arriving at a very different conception of application, since more than nine-tenths of our students fail for want of proper direction.

Application will ere long become a scientific understanding which students will be taught on practical principles. Application is not, as almost all teachers claim, "essentially a personal endowment," since like the speaking voice, it is as a rule the result of proper training or of environment. Concentration becomes a ridiculous term without practical knowledge of our

object and reasonable understanding of the means we have to employ in order to concentrate.

I have heard many teachers say: "You must learn to concentrate" or "you must apply yourself" and feeling ashamed of the sense of utter helplessness which this empty advice generally creates in the student he has not the courage to answer: "That is what I came here to learn; it is my ignorance of what I have to do that prevents my progress; I am looking to you for practical knowledge that I may apply myself."

All who take up any study for the love of it start out with more or less *will,* which is the greatest power in our being, but *will* must be stimulated through knowledge, for unless the will receives inspiration it will yield no profit, as *interest* is to the will what breath is to the body.

When interest wanes, progress ceases; and if the student is not given practical knowledge interest is bound to cease. Application is *will* applied to something we understand; no

amount of *will* can result in achievement if we do not understand what we are to do. Consequently, concentration is applying *will* till it conquers its object, but if the object is not clearly understood concentration is an idle term.

Application and concentration must become actual factors operating through understanding of nerve *breathing,* for our mind receives and distributes its power through the nerve system according to the control and direction of respiration.

Therefore, we can readily understand why the East teaches breathing from the solar plexus to the upper nerve centre, using the inhaling current for inspiration and the exhaling current as the medium of brain development, directing this much misunderstood vibratory current directly to the brain or, as the East terms it, "the Moon."

When we begin to live in contact with an actuating *will,* inspired through scientific knowledge of the mediums we have to employ

to reach our purpose, we will begin to gain confidence in ourselves as we will obtain satisfactory results from our labour.

That this is practical has been proved over and over again. Students who believed they could not learn by heart, found it a comparatively easy task through breath concentration, which placed the record in the brain through nerve stimuli stirred to activity through consciously directed breathing, which let me repeat once more, is drawn from the solar plexus to the Medulla and then voluntarily directed from the Medulla to the brain.

By concentrating upon the various elements used in voice development, a student can, through voluntary adjustment, change his physical as well as his mental poise in a surprisingly short time, thereby creating a new attitude to *himself,* since in developing control over his body and *will* he becomes master of his nervous force.

Through this manner of application alone can the student arrive at a knowledge of his

own inner capabilities and develop them to practical, lasting results. For though he may be inspired to great enthusiasm by outside influence, these impulses will soon fade away and leave a reaction, if his *will* is not self-centred, as nothing can lead to success that has not its stronghold in self realisation. Concentration must be fanned to its purpose through perfect understanding of all the difficulties to be overcome; yet with a *will* that cannot be swayed from its purpose!

The student's attitude towards his art must be one of deep sincerity. To become an artist he must live the required conditions, poise becoming habitual because the complementary increase of the entire nerve system has become habitual. In fact all the apparent points of contradiction in opposed methods must become the mediums of varied effect, like the stops of an organ, which we must learn to govern, that by utilising them in their proper places artistic control can be maintained.

Physiology and psychology must become the

two complementary halves of one perfect understanding, interblending in all our efforts to perfect the most wonderful of all instruments: the human voice.

CHAPTER XXIII

THE INCONGRUOUS CONDITIONS OF THE VOCAL PROFESSION

THE great majority of vocal teachers are as we know strongly opposed to the idea of attracting the pupil's attention to physiology, since they believe that science, interesting though it may be to promoters of research, does not concern the student of either Elocution or Song. As stated before, many teachers consider technical knowledge of any kind unessential, because they believe it leads the student to concentrate too much on the mechanism, thereby preventing artistic effect.

The trouble in the vocal profession *does not* lie in the students' want of aptitude to apply themselves to technical knowledge, but in the fact that comparatively few teachers possess sufficient practical knowledge of the vocal

organ to explain it sufficiently simply to their pupils.

It is ignorance of even the fundamental principle which prevents a logical connection between cause and effect. There is not an element in life which does not depend upon a complementary force for its development, yet most teachers of the voice ignore this law. Voice depends not only upon a recognition of the balance between cause and effect, but upon their progressive and sympathetic co-operation.

That the conditions in the vocal profession are unsatisfactory, is not to be wondered at, since nine out of ten teachers have never studied the mechanism of the vocal organ or acquainted themselves with its various factors. No examination is required in this profession; any one who wishes to teach voice culture can do so without investigation as to his capability. More than half of our so-called teachers are singers or speakers who failed in their profession because of a faulty method; or musicians who have no knowledge of the vocal organ.

It is a remarkable fact that many people

think a musician can teach singing because he plays the organ or piano, and the still stranger fact is that these musicians think so themselves! I can imagine nothing more incongruous, for though a musician may be a good judge of effect, he is as a rule absolutely ignorant of even the *fundamental* principles that govern its cause. A pianist or organist is consequently no more qualified to teach singing than he is to teach the violin.

Helping a student to phrase a musical score and coaching him so that he may grow familiar with the music or its dramatic rendering, is very different from placing a voice. In fact, it is not essential that the teacher of voice culture be a great musician, as tone building and tone effect are the result of applying nature's law in the operation of her elements.

It is the failure to recognise this fact that has brought singing to such a deplorable state. It is generally the charlatan who prospers as he advertises widely and promises results regardless of natural ability.

And the same is the case with the speaking voice.

The frequent loss of the charming, natural timbre in both elocution and song through unscientific tuition is a very old and pathetic story. There are many students who are naturally so well poised that a comparatively short period of study should have guided them to successful results, but unfortunately they are hampered by the conventional attitude that so many teachers assume towards the art of voice culture, deceiving themselves and their pupils into the belief that they can improve upon nature's simple methods by the application of *new* principles in art.

In fact, the attitude towards voice is so unnatural that till a great revolutionary spirit invades this field of art, Voice will remain, as it is to-day, the forced fruit of artificial conceptions—*or* a God given gift that blossoms *in spite* of training!

Hoping I may prove of some service, I have with the utmost care arranged ten progressive

lessons, their matter necessarily representing a concentrated, direct development of the principles already explained throughout the book, starting once more with the needed preparatory adjustment which I consider so essential. And I trust my very repetition will enforce faith in my readers as, I believe, my method is a consistent unfolding of nature's law.

PART III

Foreword,

Ten Progressive Lessons and Conclusion

"No one law—that is to say, no one force—determines anything that we see happening or done around us; it is always the result of different and opposing forces nicely balanced against each other."

—"The Reign of Law."

FOREWORD

To grasp the distinction between the modern progressive method of voice culture and the old, a broader conception than that of the old masters is essential. Song must from the very beginning be brought into the closest relation with speech. In either art we must recognise that muscles and bones are accessories which should be adjusted before we can begin to operate the instrument.

Consequently, the study of voice culture must be approached in stages, as its progress is based upon a systematic development of the three essential conditions which we find in every phase of life: *Cause, Operation* and *Effect.*

In voice these essential conditions are found in:

1. Physiology, representing the instrument,
2. Art, representing the playing upon the instrument, and

3. Psychology, representing the powers which govern effects.

This classification will insure a scientific progression in our studies and teach the student from the very beginning to discriminate between the adjustment of the organ and the art of playing upon it; the former involving muscular and anatomical knowledge, the latter understanding of voluntary breath control.

More than half of the failures in voice culture, whether the study is elocution or song, springs from the student practising without understanding the *cause* of tone, the *effect* consequently being unnatural.

LESSON I

POISE OF BODY

VOICE placing can be reached only through scientific understanding of *poise* in its *threefold* aspect, that is:

Poise of Body.

Poise of the Vocal Organ.

Poise of the Nerve System.

Perfect poise of body, which is all important, involves two distinct actions: *anatomical* and *diaphragmatic.*

As the lungs lie in the chest box and are fastened to the ribs it stands to reason that their expansion is a consequence of anatomical adjustment, voluntary respiration, therefore, being unnecessary for this purpose as the action of the lungs is regulated automatically according to our habitual poise.

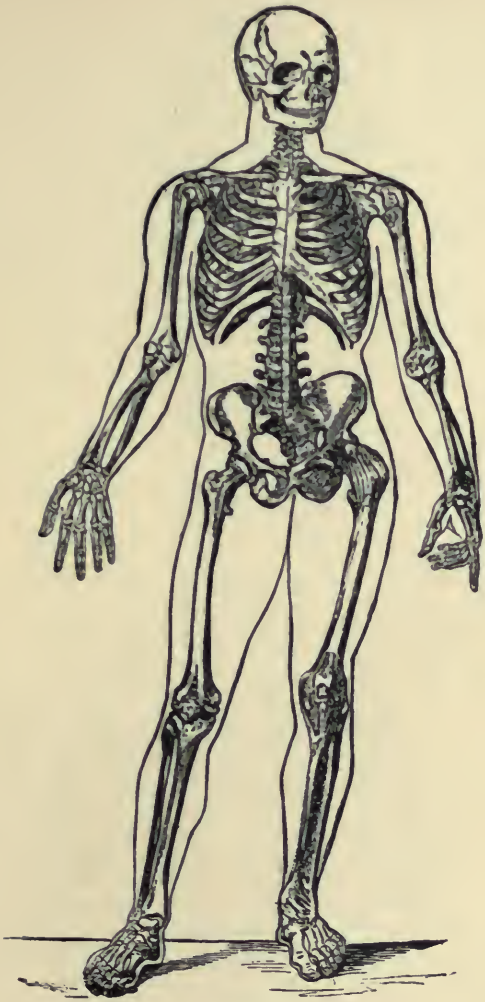
Anatomical adjustment should never be

forced, but simply be regulated by gently lifting the breastbone and drawing the shoulder blades back and down till the shoulder bones fall into their correct position, which means they ought not to protrude.

As an anatomical and muscular stimulus nature has given us the most splendid exercise in *stretching,* which secures far safer results than many of the exaggerated exercises used in gymnasiums.

To secure poise, the diaphragm muscles must be drawn down and forward and *be kept there,* the diaphragm being the guardian of anatomical adjustment involving perfect costal expansion without any attention on our part. This muscular movement of the diaphragm must not at first be accompanied by inhalation, as the student will not learn to discriminate between the complementary action of the solar plexus through nerve respiration and habitual breathing if the muscular poise of the body is connected with the active operation of voluntary inhalation.

It is the distinction between habitual and



THE FRAME OR SKELETON

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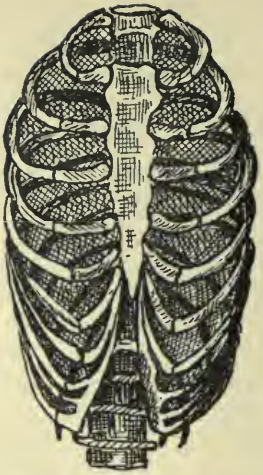
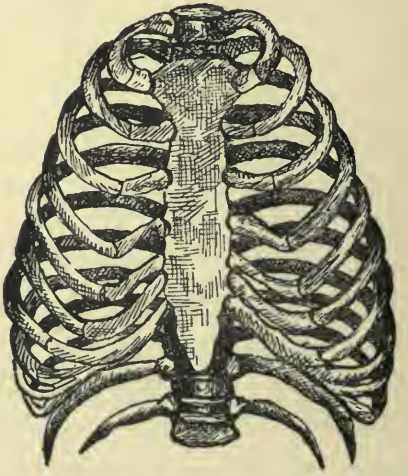


Shape of the Framework from both Tight Lacing or Wrong Breathing



Shape of the Framework of the Chest for Natural or Correct Breathing

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complementary control which is so important for students of voice. Therefore, to judge of their varied actions, the student should go through the exercises till he gets practical understanding of their progressive development. For this purpose the student should place one hand over the diaphragm in order that its actions may be felt in two decided movements, that is:

First as muscular, resulting from proper physical adjustment;

Second as complementary, when, through conscious nerve respiration drawn up from the diaphragm towards the Medulla, an expansion will take place not only in the diaphragm, but throughout the trunk of the body.

The increased diaphragmatic expansion which the latter mode of breathing involves will far exceed any action that muscular government could possibly have ensured, as the former influences the *entire* organism.

I know all the pros and cons as regards this mode of breathing so well, that I advise those who cannot at first succeed in this comple-

mentary expansion, to persevere, since entirely apart from song or elocution, it means *endurance and nerve control.* It stimulates all the organs with that invigorating current which no other medium has the power to create. It heals and charges the digestive organs with new life, because it is actual life. Lung breathing, in its association with health, simply represents a medium of chemical change; whilst in connection with the vocal organ, *lungs are the bellows* and have *no other* power of control.

Nerve respiration will never strain the lungs in singing as does the muscular contraction of the diaphragm so commonly taught, for as stated in the chapter on breathing, contraction involves *forced* lung expansion and clavicular breathing.

In Medulla or nerve respiration the *upper* part of the abdomen should expand as the organs there are as much dependent on nerve stimuli as the stomach and lungs. The *lower* abdominal walls should *not* fall.

All conscious deep inhalation should be di-

Contraction or Forced Breathing resulting in Clavicular Respiration

Expansion or Correct Breathing resulting in Diaphragmatic and Nerve Respiration

Collapse of Diaphragm or Abdominal Breathing resulting in loss of Nerve Control

rected toward the *Medulla Oblongata.* This deep mode of voluntary inhalation can however *never* become habitual, as it is exercised either as the preparatory action for a concentrated effort, or to recover from physical or mental depression.

To make the object of this lesson clear, no student who concentrates on *muscular action* has control of the complementary breath supply needed in voice culture. *Poise of body* governs muscular adjustment and is the foundation on which voice alone can be satisfactorily trained; nerve respiration is a progressive development and possible only when perfect bodily poise has become *habitual.* It is *stimulating,* while muscular contraction of the abdomen and the diaphragm is *exhausting.*

Students at first should progress slowly with nerve breathing, as it is apt to bring on dizziness and headaches, till the Medulla is used to the activity of nerve respiration.

Stretching is the best exercise for the muscular action of the diaphragm and should be practised *without* voluntary inhalation until expansion is conquered.

LESSON II

THE POISE OF THE VOCAL ORGAN

HAVING realised the essential poise of the body, students must be given landmarks for securing the poise of the vocal organ. These landmarks are represented by sounding boards placed at the extreme ends of the resonator; that is, the breastbone at the base, the cheekbones at the top.

The terms "head" and "chest" will always remain legitimate classifications in voice culture, since from the vocal organ to either sounding boards muscles are connected that operate in a constant interchanging action of contraction and relaxation, thereby involving the co-vibrations of these resonating mediums according to our direction.

The vocal organ is so intimately related to the resonator that it is impossible to separate their actions; in fact it is through the movement of the resonator alone that the vocal

organ can be controlled. The larynx is, as we know, hinged on the upper ring of the windpipe and tips over for tone production to place the vocal cords in the required position of resistance against the outflowing air.

This tipped position of the larynx is the *poise* needed for song. It is at first felt by a voluntary muscular contraction of the windpipe which opens the throat; a muscular movement which should be practised as independently of voluntary inhalation as the expansion of the chest, since both are essential to singing as *preparatory adjustments.*

As nature gave us the natural exercise of stretching to invigorate the lungs, so has she given us yawning to invigorate and adjust the muscles of the throat. Tongue, larynx and pharynx reach their greatest degree of relaxation in this muscular movement which is of the greatest benefit to the student as it familiarises him with the sensation of the relaxation of the vocal organ.

Students of voice production must be made to realise the important fact that adjustment

is a physiological process producing various changes in the positions or actions of the elements belonging to the vocal organ to bring the muscles under control *before* we begin the production of song. If this were understood, onesided methods could not exist, as far as *muscular* action is concerned, for when muscles are correctly placed their further operations will be governed entirely through breath control.

All great singers are endowed by nature with proper poise and, consequently, they ignore its importance, being ignorant of its physiological difficulties. Those who teach song by actions that belong to the preparatory work of adjustment are bound to ruin the sweet natural timbre of the voice.

Students must, therefore, exercise the opening of the throat by the contraction of the windpipe drawing the larynx down to its intended point of resistance and when this *poise* is secured, deep breaths should be drawn up toward the Medulla which will connect the entire instrument through nerve respiration.

LESSON III

THE IMPORTANCE OF THE NASAL FUNCTIONS

NEXT students must learn the required operations of the throat.

To secure perfect adjustment, or poise, of throat, nasal breathing must be understood in its full importance as it prepares all the muscles and tissues in the upper part of the pharynx and nasal cavities needed for the sympathetic co-vibrations of voice.

There are just as distinct degrees of difference in the muscular actions of the nose, the pharynx and the throat during habitual and voluntary inhalation, as in the chest.

There are however unfortunately very few teachers who consider that exercise of the nasal functions has any direct bearing upon the voice, since they do not associate its operations with the sonorific and resonant cavities in the upper sections of the throat which are

beginning to play such an important part in voice culture. Many lovely voices are hampered by partial closing, or slack muscular action of the nasal cavities, both of which could be remedied with comparative ease, if the student understood the influence which the various degrees of nasal inhalation can be made to exercise.

The nasal cavities have valves, tubes and numerous nerve fibres which are rarely stimulated to healthful activity, as habitual nasal breathing, generally associated with the lungs, does *not* influence them, whereas respiration drawn up toward the Medulla will stimulate not only their action, but the action of the pharynx, the soft palate, in fact of the entire throat through their complementary inter-relation.

Therefore, nasal exercise should be taken by the student until he can discriminate between *habitual* nasal breathing which connects to lungs and therefore does *not* bear upon the vocal organ, and *voluntary* or complementary breathing directed toward the upper nerve

centre which governs our entire organism and, therefore, has a direct bearing upon the voice.

Nasal breathing is one of the most essential elements in *voice training,* as it not only connects the various muscular actions through the superior control of our nerves, but it initiates the student into the important knowledge, that as nasal breathing develops, it can be connected to either of the governing plexuses in our body till, through correct nasal respiration, new life activity can be circulated between any one plexus and the Medulla at the direction of our will.

For the purpose of exercising nasal respiration, students should expand the nostrils at the same time drawing deep currents of air upwards until they feel an increased diaphragmatic expansion enforced by the charging of the nerve system, without any muscular effort on their part.

LESSON IV

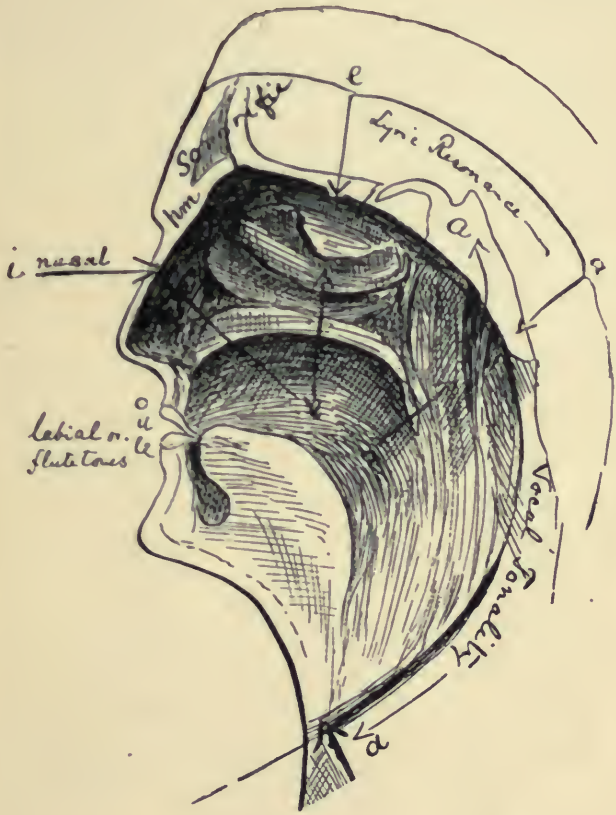
SONG IN ITS PRIMARY MANIFESTATION OF VOCAL TONE

In proceeding to the actual production of tone physiology will no longer be considered as we have adjusted the instrument, and we are advancing to the art of playing upon it.

To understand what is beneficial and what harmful to the voice, students must realise from the very beginning that *breath* is the only safe medium of control, as all muscular efforts must end in strain.

For those who intimately understand voice, there exist only two methods of voice placing, which are opposed, one advocating inhalation, the other exhalation. When properly understood, these two apparently opposed actions will, however, combine to furnish the only means for *perfect* voice control.

Tone is the material of our art, and must of



THE RETONING AND RESONATING CAVITIES AND TISSUES

necessity be perfectly produced before we can consider any effect we may desire to add.

To grasp this clearly, we must begin to realise a mode of respiration which differs from nasal breathing, as nasal respiration has nothing more to do with the *actual* production of tone than diaphragmatic control. These are essential for the purpose of *adjusting* and must become habitual factors.

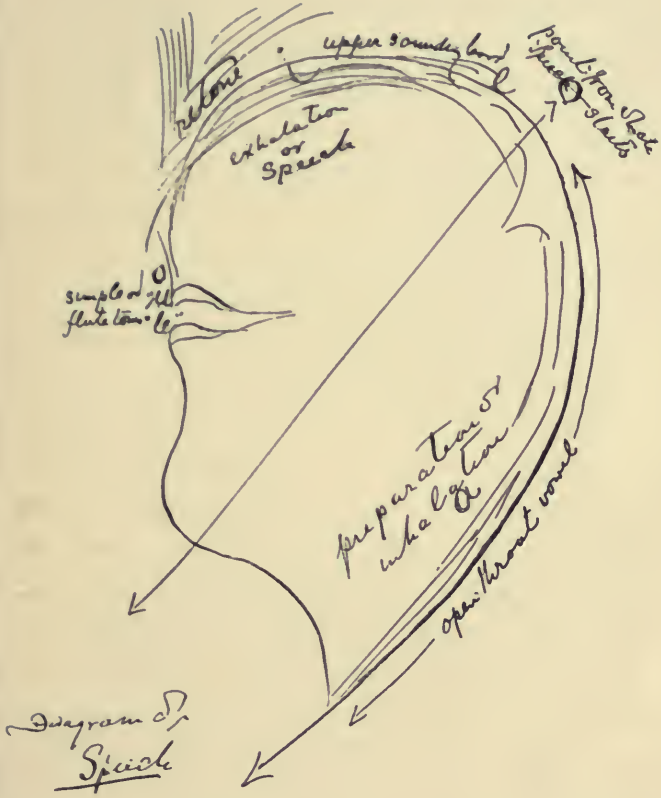
Inhalation during song or speech is entirely governed by mouth breathing. The mouth becomes now the all important centre of operations as it connects directly with the vocal glottis below and the pharynx, or "Dernière Bouche," above.

When the larynx is placed, tone is produced by air filling the ventricles of the vocal glottis which regulates the cords by its elastic pressure, the principle being exactly the same as that in the tone production of birds.

To comprehend this in such a practical way that the student can apply it, we must realise that all sound is created through friction; one body resisting another. The moment the

larynx is tipped, the disk closes over the respiratory glottis below where the air now accumulates, thereby representing a tense body against which the vocal cords are made to operate, regulated in their action by the pressure of air from *above*—the false and true cords thus being entirely under the elastic control of air.

In beginning *vocal* practice the student should place his finger on top of the breast bone, the vibration being felt from this bone to the larynx through muscles securing and regulating the position of the organ from below, while on the other hand, muscles attached from the horns of the larynx to the soft palate are regulating the organ from above, all muscles, however, coming under the immediate control of the breath accumulated in the vocal glottis. If the student begins to sing, gradually up and back, he will find that all the muscles, which are now in sympathetic, natural co-operation, will begin to adjust themselves. In this mode of practice the student's object should be primarily to perfect attack of vocal tone, scales being



TWO COMPLEMENTARY HALVES OF THE SPEAKING VOICE

the best medium of practice, ascending from the point of resistance to the upper sounding board, thus influencing the soft palate unconsciously through the action of the vocal glottis. This should be practised entirely on the broad Italian "A" which represents the open-throat position.

The pupil should always be conscious of the two extremes of the resonator as the muscles connected with the "sounding boards" are acted upon with every tone, thus becoming the direct mediums of co-vibration which influences other resonating cavities.

In vocal practice no tone should be taken without the student being conscious of sounding board effect, for a tone should always receive reinforcement from either the breast bone or the head bone, or from both, as in the medium voice, which stands in balanced relation to both.

This explains the error of the three register school, for we have not *three registers,* but three mediums of reinforcement; a fact which will prove indispensable in voice development.

During this vocal practice the student must never lose the feeling of elastic connection, as the principle of training should be one of progressive tension regulated from one sounding board to the other through breath control.

For directions study the accompanying diagram.

This practice will initiate the student into what is termed "Voice building," for through the operations of the vocal glottis voice can be much increased, as the resonator or throat has the power to expand greatly through the inflow of air controlled in the vocal glottis, thereby lowering or raising the point of resistance according to our regulation of air *from above.*

In addition to active practice, exercises should be taken by the student, in expanding the throat through mouth breathing when *not* singing, till the tongue root falls naturally under the control of the vocal glottis.

LESSON V

SPEECH AND ELOCUTION

To understand the progressive development of vocal art, students must cease to look upon speech and song as opposed, and learn to bring them into complementary relation.

Speech and elocution are far more elusive in their development than song, because they must in no way be connected with vocal resistance. In song we begin by securing the *vocal* position, *ignoring speech,* as the larynx must be lowered and the glottis expanded to a degree *never* used in speech. In speech on the contrary we begin by concentrating our attention on the control of *exhalation,* the position of the organ being left to the automatic control of *habitual* inhalation which, however, must be regulated according to our fixed rules of perfect poise.

Speech, therefore, simply requires the posi-

tion nature meant we all should have and which so few possess because of ignorance in regard to respiration. If the breath were properly directed into the resonating cavities in the head, face and nasal parts, speech would vibrate with rich timbre from the effects so obtained and be governed on the simple principle of exhalation which distinct enunciation helps to keep in liquid flow. Such control prevents self-consciousness, as the speaker is in every way intent on giving out.

All beautiful resonant voices are controlled in this natural manner, inhalation acting unconsciously on throat and organ, the speaker simply entering into the outflow of voice with heart and soul.

All who speak in the throat, or by the resistance of the disk, or by the action of any muscle will draw the air current back, which is liable *first,* to irritate the throat, *second,* to encourage escape of air, which is extremely weakening to the cords, *third,* to lose all individual beauty of voice, and *fourth,* to prevent being heard.

Speech becomes an easy study, if the natural principle of inhalation and exhalation is obeyed, the adjustment of muscles never entering into the question as they should be habitually controlled by correct inhalation.

By the drawing of breath toward the upper nerve centre the larynx will tip and, through its muscular connections, set the breast bone in vibration, sonority therefore increasing by the directing of our breath *upward* as it stimulates tension through the nerves of the laryngeal plexus.

The French practice of guiding the exhaling current to retone through the use of "Hm" with mouth closed is invaluable for speech, as it teaches direction of the exhaling air and also gives a keen sensation of chest resonance, although the control is in the head since, as stated, breathing up has tipped the larynx and through various nerve plexuses connected a sympathetic tension in the muscles which influence the sounding boards to co-vibration.

Speech is governed by a consistently directed effort of exhalation which in its habitual gov-

ernment during speech will control inhalation as long as the student directs all effort down to lips from the upper nerve centre from which speech should always be directed.

For practice study diagram.

For the purpose of feeling the resonance which both sounding boards yield in speech, it is an invaluable practice for pupils to place the fingers on either side of the cheekbones and direct the outflowing current from this point to the breastbone in a half circle saying: "From bone to bone"—and they will find keen co-vibration in both sounding boards giving rich timbre to the speaking voice. Bone reinforcement is essential in all vibrant voice.

LESSON VI

VOCALISATION

HAVING analysed the simple law of the speaking voice, we return once more to vocal art, which, through proper application of the vocal glottis, should help the student to place the voice in the required position of resistance.

Students can gain a considerable increase of range in a surprisingly short time, if they continue this mode of practice, using the open throat Italian vowel "Ah."

But as this manner of control gradually becomes habitual the student must take up the study of other vowels also, as each has its own definite position and characteristic quality.

If the student is told to vocalise on the Italian "e" or "i" or French "le" he will find that the easy flow and beauty of tone will be interfered with, if he tries to draw these vowels back under the control of the vocal glottis, as

the retoning Italian "i" or pharyngeal "e" or labial "le" needs an *exhaling* effort to produce distinct enunciation, which reverses the action of breath in our practice.

We will find that vocalising on the various vowels, by changing the point of attack of tone, brings every colour and degree of sonority into play in the voice, the simple tones becoming compound by being retoned in the various sonorific and resonant cavities to which the various vowels guide us.

Consequently, speech will prove complementary to song when through the practice of vocalisation and breathing, the fundamental vocal position becomes habitual; but be it always remembered, that it is apt to be disturbed when the student begins to direct the attack of tone to the retoning mediums.

The transferring of the regulation of tones to the resonant and sonorific cavities may be compared to studying effects through a reflector. It will appear strained, until an artist learns to govern his effect in this manner.

Therefore, we must labour to combine vocal tone and speech.

In vocal glottis control speech becomes faulty and indistinct because drawn inward. In the French school the tones often become nasal, because due to the constant aiming forward into the nasal cavities the position of the vocal organ is apt to be raised, which closes the throat. We must, therefore, learn to recognise that there are two sides to the question of voice production which training must harmonise, till they become complementary.

All successful artists combine these opposed sides, unconsciously interblending the complementary action of inhalation and exhalation according to vocalisation, which through practice becomes habitual. What is of particular importance to the student is to realise that the control of voice, whether regulated through inflow or outflow of air, *remains in the mouth,* the diaphragm and lungs being unconscious subservient factors which should operate automatically *because poise was secured before song began.*

The importance of this lesson lies in the realisation that vocal control *must remain centred over the vocal cords.* Voice cannot be regulated from below through diaphragm action, or lung expansion, which theory is as illogical as the idea that the bellows could operate the keyboard or the stops on the organ.

LESSON VII

RETONE AND RESONANCE

THOUGH all students have their individual faults and difficulties in voice training, there are certain rules which should be followed by all, since they give insight into vocal tone and its various resonating and sonorous effects.

These rules, which I term *Vocalic Exercises,* should be of service to the student for three important reasons:

1. Because the open throat position of certain vowels and diphthongs help to place the vocal position of voice.

2. Because in exercising the tongue in these various positions the student will overcome the difficulties of speech.

3. Because vowels are the direct mediums, through which alone the sonorous effect and varied degrees of retone can be understood.

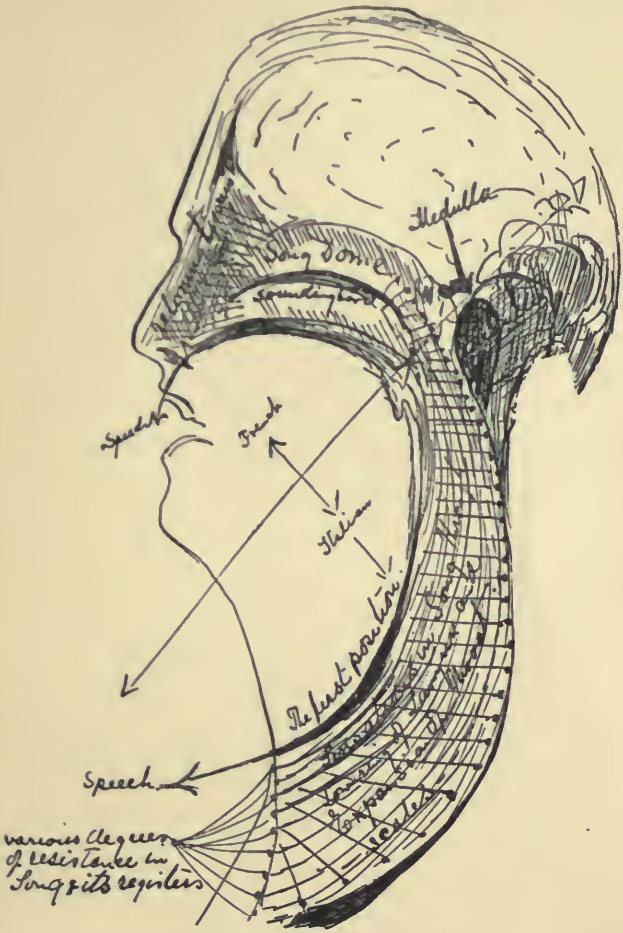
As the student begins to conquer the open

throat "A" position which is exercised through inhalation, he should in complementary practice take the tone over to the sonorific, or nasal cavities and vocalise on the Italian "I" concentrating on and guiding the exhaling current of air into the sonorific cavities which in creating sympathetic co-vibration will add great warmth and compound effect to the voice.

This practice should be regulated through the practical understanding of vibrations, since in forced pressure the upper partials will become too predominant and tone therefore unpleasant. The student's ear must guide him in obtaining the proper effect.

Should the practice of nasal sonority produce a predominantly nasal effect, it is occasioned by a faulty action in the throat springing from a wrong position of the vocal organ. Under these circumstances the student must return to the open throat position and vocalise on "A," because he is not as yet ready for retoning work. Retone, like a reflector, will lay bare any faulty position of the throat.

Students who have difficulty in the retoning



SENSATION OF VOCAL TONE

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practice of "i" and "e" should progress from "ah" to "eh" which will guide the tone through the pharynx towards the nasal cavities, soaring over what the Germans call "Der Himmel des Gesanges" which connects the nasal resonating mediums with the open throat forming, what I call, the circumference of the song-ball.

The practice of the labials "o," "u" and the French "le," on the other hand, will help the student to understand the pure simple flute tone which, very softly exercised, yields most finished effects.

When the student, through concentrating on one vowel, has gained such habitual control that he can connect the entire circumference of his song-ball without a break, speech will become a complementary factor, yielding constant charm by its varied vowels, which help to interblend all retoning sonorous and resonating effects.

I do not give any particular exercises, because from a mechanical standpoint all are good, if applied to these rules, though the scale

of necessity always will remain the fundamental of all practical work.

Speech should always be employed with melodic exercises, as it blends vowels and teaches the liquid flow needed for consonants, which represent links, connecting the vowels in a musical vibratory movement, for all consonants have sounds within themselves and therefore aid the flow of the voice.

LESSON VIII

CAUSE AND EFFECT

THE foregoing lessons should by now have familiarised the student with the need of a scientific classification of cause and effect. No art bears fruit without the artist having a system, for, even though he may not be able to express it scientifically, *all* great singers have a practical basis on which they operate their voices, knowing how to remedy defects and to create effects through the sensation of tone.

As stated in this book, their concentration in tone attack may differ, because each has to overcome various difficulties, but all methods can be systematically found on the essential circumference of the resonator.

When the old Italian masters advocated an open throat as the fundamental principle of voice culture they meant the vocal glottis control; in other words, that voice should be con-

trolled by the regulation of breath from above. This method was lost, because the following generations associated control with a muscular action from *below,* attempting to make the automatic lungs and diaphragmatic actions the superior regulators, instead of simply representing the body upon which the vocal glottis operates the vocal lips.

Viewed from this standpoint all contradictions will in the end disappear, as speech unconsciously will retone voice, influencing resonance and sonority through our habitual manner of breath control.

The actual *training* of singing consists in bringing the various colours and retoning effects into predominant play, so that we may render the suitable simple or compound character needed in our art. Certain voices and temperaments prefer lyric resonance to nasal sonority and this is an individual preference which nature guides.

Consequently, there is *no* contradiction in Jenny Lind having furthered the soft palate school, as she used the pharyngeal resonance

predominantly. The flaw in her method was that she believed it to be the *only* medium through which to regulate the voice. All lyric sopranos use this resonance for *all* tones; as a rule condemning chest effect, which leads to loss of colour they easily might have obtained, if breath had continued under proper government.

The French advice: "La voix est une affaire du nez" is just as onesided, yet just as essential, though unpleasant if controlled from the action of the diaphragm, instead of from the vocal glottis.

On the other hand, Patti's advice will prove as helpful as either of these, though she believed in labial effect, her practice being predominantly exercised on "Ha" the "h" being accentuated to encourage the liquid flow of song to lips. Patti, therefore, bringing even the open throated "Ah" over to retone; a power which sprang from her perfect habitual poise which was so secure that the vocal position was never disturbed.

Galen's advice, given five hundred years be-

fore Christ, and apparently in opposition to Patti's method, is nevertheless equally essential to-day; there is nothing new in nature, we are only beginning to understand and to apply her complementary principles; therefore, students must learn to benefit by all the progressive stages needed in voice training, and see that cause of tone must be understood, before tone can be properly controlled; just as attack and smooth scales on the vocal "A" must be placed before tones can be safely developed in effect through tone colour, overtones, or speech.

There is, consequently, no contradiction in that an able master gives his pupils opposite directions, whereas, there is the greatest contradiction in the accepted onesided theory that all students should indiscriminately study by the same rule, regardless of their individual difficulties.

Hence, this lesson points to the need of a decided and practical classification of cause and effect.

LESSON IX

POISE OF THE NERVE SYSTEM

HAVING obtained practical insight into the organ we must now approach it with the additional understanding that speech and song are given us for a purpose, in other words, that we speak and sing, because we have something to say or interpret.

This will guide our study into different channels, for we shall realise that our being consists of two complementary parts which are as interdependent as cause and effect in voice; in other words we shall understand that behind voice are *the mind, the will* and *the soul.*

Psychology must, therefore, be presented to the student on a practical basis that it may form a reasonable connection between the conditions of our being and enable us to control not only our voice, but our thoughts and our

emotions, instead of being controlled by them.

Our art must be governed through a scientific understanding of repose and mastery, so that we never lose *self-control,* but gain confidence and assurance by making our voice the direct medium of self expression.

Half of our artists fail to make the proper use of their emotions, because they are mastered by them, thereby exhausting themselves and developing a nervousness which will undermine not only their art, but their health.

All nervousness is due to ignorance. We are nervous, because there is something we do *not* understand, or have not mastered. *Will* cannot direct our practice if we do not know how to operate, or apply it. Knowledge is the fundamental requisite for success in any field.

Consequently, students must begin with the same practical principles in dramatic studies as in voice culture and realise that psychology does not represent a metaphysical supposition, but a science which through proper application

will yield control of the faculties. Poise of mind is as essential as poise of body, and unless nerve control is understood on scientific principles, students will become nervous subjects in their professional career, instead of self-controlled artists.

Therefore, nerve respiration must be constantly practised by the student, till *will, mind* and *soul* operate through voluntary nerve stimulation which in no way exhausts, if the student understands its application and reinforcement.

Singers who constantly exhaust themselves through their emotions or nervousness are not suffering from an individual temperamental nature as so many of them claim, but from want of knowledge of how to govern their emotions.

Hence, poise of nerves must become habitual with the artist through the applied understanding of psychology which should be made to mean control of *will, thought* and *feeling* through reasonable knowledge of our nerve system.

For practical directions in poise and control of the nerves I refer the student to the chapters on nerve breathing and respiratory nerves.

LESSON X

INTERPRETATION

When the student understands how to control his entire being through the application of nerve respiration, a feeling of strength and repose will enter his art.

He will look upon it with a new understanding, for he will appreciate that art is not for art's sake, as poets say, but that it is the language of life.

We sing and speak not because of a conventional instinct, but because we have something we long to say, sincerity and love of our art being the propelling force.

Phrasing and expression are therefore a matter of true feeling, just as a sympathetic personality is the fruit of sincere self-realisation and understanding.

When a student feels song or elocution as

the language of life, phrasing is a natural consequence.

Students who must have breath marks placed throughout their music do not understand the language of song. *Sense* must always be apparent, we must study a song, till we absorb its meaning and it becomes one with our thoughts. A musical phrase is simply an expression of a thought and must find its response in us before we can interpret it.

Simplicity is the greatest power in all art, and rhythm and modulation the pulse that must beat individually in every one of us. It is the individual that charms, and in song and speech this must be more predominant than in any other art, as here we are speaking directly to the people both in words and in the rhythmical language of music, which will lose its magnetism, unless we mean and feel what we are interpreting. No two artists, having individuality, could give the same interpretation.

I consider it an insult to my pupils to decide their phrasing. I appeal to their reason and human feelings. A melody must not stand in

the way of sincere expression; those who can rise above its conventionality are artists. All who study song from a melodic point of view have a narrow conception of this great art, which is the reason why we often prefer the singing of an untrained voice to a highly finished vocal production that lacks sincerity.

Feeling controlled through the vibratory pulse of nervous energy represents magnetism and must be the propelling, yet spontaneous power of all true artists: Consequently, they should control their art through a power far superior to physiological action; in other words, the psychological factors must in the end gain all mastery.

When students arrive at this control they will understand what Walt Whitman meant when he said of voices, "we are waiting for that to come, which has the quality to bring forth what lies slumbering, forever ready in all words."

CONCLUSION

I HAVE but little to add, except that I know we are nearing the time when voice will begin to mean much more than it does to-day. Its profound mystery will be solved only when man understands nature's principles and is able to reconcile her apparent contradictions. Physiology and psychology will then be complementary studies forcing the philosophical conclusion that all parts belong.

Consequently, science will prove as essential as art, for without knowledge of both we will continue voice culture on onesided principles, which must always lead to failure as "Unfortunately a half truth, if applied, may turn out to be the most dangerous type of falsehood."

I firmly believe voice control to be so simple that a child can be taught to apply its principles, whereas, through doubt and a perverse attitude, man will continue to question nature's simple device thus creating his own confusion.

To me voice has become a never tiring faculty which increases in sonority and vibratory timbre with its constant use; my control being a consequence of habitual poise governed by nerve respiration. Through years of labour I have learned to understand and apply nature's law realising the significant motto of the old Italian masters:

"He who knows how to sing or to speak, knows how to breathe."

THE END

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